Settling Work Defendants

DRAFT HEALTH AND SAFETY PLAN

Omega Superfund Site Operable Unit 2

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APPENDICES

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Appendix C: Summary of Chemical Hazards

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ROUTE TO SUGGESTED HOSPITAL



PRESBYTERIAN INTERCOMMUNITY HOSPITAL

Phone Number: (562) 698-0811 12401 Washington Blvd Whittier, California 90602

Written Directions to Hospital from Site:

Distance/Time: 3.7 mi/10 min

- 1. Head north on Norwalk Blvd toward Lakeland Rd 262 ft
- 2. Turn **right** at the **1**st **cross street** onto **Lakeland Rd** 0.5mi
- 3. Turn left onto Bloomfield Ave 0.7 mi
- 4. Continue onto Santa Fe Springs Rd 2.1 mi
- 5. Turn **left** onto **Persing Dr** 0.2 mi
- 6. Turn left onto Washington Blvd 0.2 mi
- 7. Arrive at **12401 Washington Blvd** The last intersection is Seasons Ave, if you reach Lambert Rd, you've gone too far.

ROUTE TO SUGGESTED URGENT CARE FACILITY



URGENT CARE AMERICA, INC.

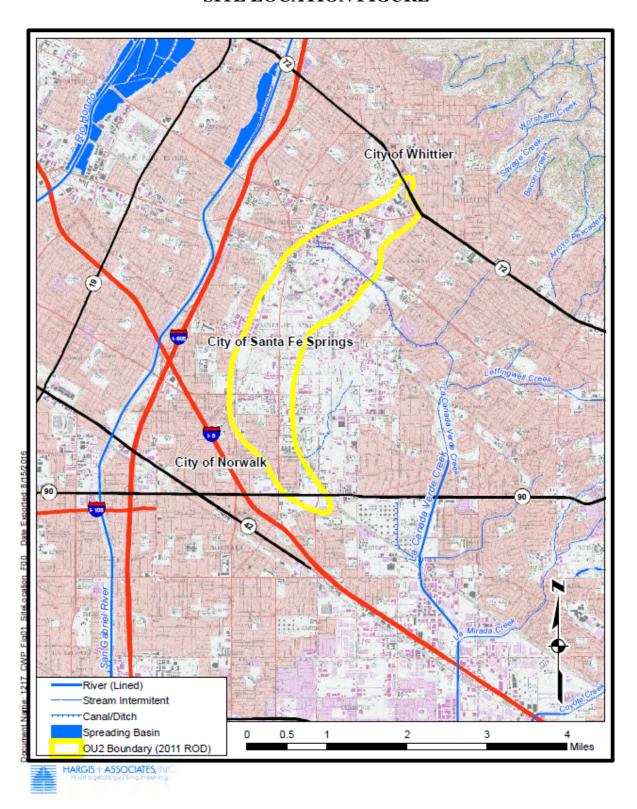
Phone Number: (562) 906-7766 13470 Telegraph Rd Whittier, CA 90605

Written Directions to Urgent Care Facility from Site:

Distance/Time: 2.4 mi/5 min

- 1. Head north on Norwalk Blvd toward Lakeland Rd 0.3 mi
- 2. Turn **right** at the **2nd cross street** onto **E Florence Ave** 1.0 mi
- 3. Turn left onto Shoemaker Ave 0.5 mi
- 4. Turn right onto Telegraph Rd 0.7 mi
- 5. Arrive at **13470 Telegraph Rd** The last intersection is Mina St, if you reach Gunn Ave, you've gone too far.

SITE LOCATION FIGURE



1. LIMITATIONS

Geosyntec has prepared this document as a template for a site-specific Health and Safety Plan (HASP) for the Remedial Design activities at the Omega Chemical Superfund Site, Operable Unit 2 ("Project"). These activities include the pre-design investigation, the leading edge investigation, and the annual groundwater monitoring program in Operable Unit 2 (OU2). This HASP is for use on the Project, and shall only be used in concert with a complete emergency contact notification list for the supervising contractor. Contact numbers provided herein for Geosyntec personnel shall only be used by Geosyntec employees and subcontractors under Geosyntec's supervision.

Geosyntec is not liable for the health and safety of other contractors or the subcontractors overseen by other contractors. Contractors need to provide their H&S Planning Documents specific for their work activities to supplement the minimum requirements noted in this HASP. At a minimum, as part of its scope of work, the future supervising contractor for the Remedial Design activities at the Omega Chemical Superfund Site, OU2, shall provide an updated HASP with the appropriate emergency contact information, emergency response procedures, and key personnel and their health and safety responsibilities.

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2. INTRODUCTION

This HASP was prepared to address potential project-specific hazards known or suspected to be present associated with the existing conditions and work to be performed at the work site(s). This HASP was prepared to meet the minimum requirements specified in Occupational Safety and Health (OSHA) Hazardous Waste Operations Emergency and Response (HAZWOPER) program 29 CFR 1910.120, and the H&S requirements of the client and associated parties.

3. SIGNATURES

Prepared by

3.1 <u>Preparers and Reviewers</u>

This HASP must be maintained on site when field work is being performed. The project's Health and Safety Coordinator can change or amend this document, in agreement with the Director of Health and Safety or Project Manager. Amendments (e.g., changes in personal protective equipment, addition of tasks, etc.) must be documented in Section 20 and in Appendix A. This HASP must be reviewed and amended on an annual basis for projects lasting more than one year.

Trepared by.	Project's Health and Safety Coordinator	Date
Reviewed by:	Control 2 Division of Health and Cofee	Data
	Contractor's Director of Health and Safety	Date
Approved by:	Project Manager	Date
This HASP has been	given to the following H&S approved contrac	tor(s).
Contractor:	Representative:	Date:
Contractor:	Representative:	Date:
Contractor:	Representative:	Date:

3.2 Site Workers

This HASP must be reviewed by personnel prior to site work. Workers not in attendance at the initial meeting must be trained by the Project's Health and Safety Coordinator on the information covered in the pre-entry briefing. After reading the HASP and attending a pre-entry briefing, All other parties covered under this HASP must sign the following acknowledgment statement.

"I have read, understand, and will perform my work in accordance with the information set forth in this HASP."

Signature	Printed Name	Date

4. EMERGENCY CONTACT INFORMATION

	Telephone Numbers				
Contact	Office	Alternate (Type)			
Fire Department – Sante Fe Springs Fire Department Station 1	(562) 944-9713				
Police Department – Norwalk Sheriff's Station	(562) 863-8711				
Hospital – Presbyterian Intercommunity Hospital	(562) 698-0811				
Utility Emergencies	811				
Client Contact -					
Other -					

Contractor shall add key project personnel and their emergency contact information to the table above.

5. APPLICABILITY OF THIS HASP

This HASP was developed with information based on site history, potential chemical, physical, and environmental hazards to comply with the minimal requirements of 29 CFR 1910.120. Contractors, at a minimum, shall ensure that their employees and subcontractors comply with these procedures and other health, safety and security provisions in the Contract. Compliance with this HASP shall represent the minimum requirements to be met by contractors, who shall be responsible for examining all requirements and determining whether additional or more stringent health, safety and security provisions are appropriate for their portion of the work and implementing them accordingly. Therefore, for firms executing all or any portion of the work, this document and its contents should not be used without a thorough peer review by their health and safety managers. Prior to commencing work, such firms are responsible for reviewing and supplementing the HASP to add appropriate procedures specific to their portion of the work.

6. SITE/TASK/HAZARD DESCRIPTION

6.1 <u>Site Background</u>

Site Location:

The following is a brief description of the site, including information as to the location, approximate size, and current usage. A description of the tasks to be performed is also presented.

The former Omega Property was located at 12504 and 12512 East Whittier Boulevard, Whittier California. OU2 includes areas downgradient (south/southwest) of the former Omega property.

Approximate Size of Site: 4 square miles for OU2

OU2 encompasses an area with a mixture of

• Current Site Usage: commercial/industrial, residential, and rural land use.

• Description of Surrounding Property/Population:

North	Mixed land use	East	Mixed land use
South	Mixed land use	West	Mixed land use

6.2 <u>Task Descriptions</u>

Task 1: Drilling Oversight and Soil Sampling

Oversight of drilling operations, including use of mud rotary, sonic, and hollow-stem auger drill rigs for lithologic logging and sample collection. Activities associated with drilling and soil sampling activities include:

- Utility locating for underground and aboveground obstructions;
- Borehole drilling and soil samping using various drilling methods such as hollowstem auger, sonic drilling, and single pass mud rotary;
- Traffic control (if necessary based on sampling locations)

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible and remain aware of moving parts, pinch points, and other risks; wear ear protections (such as earplugs) when drill rigs are operating
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Utility related hazards perform utility clearance prior to drilling and hand auger to 5' bgs
- Storage of bulk materials securely store soil cuttings and water from decon in 55-gallon drums for disposal
- Exposure to site contaminants wear nitrile gloves when handling site material and any equipment that contacted contaminated site material.
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building

Task 2: Geophysical Logging

Oversight of geophysical logging activities, which includes logging of boreholes/monitoring wells using electronic, downhole geophysical logging tools. Potential hazards associated with this task include the following:

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible and remain aware of moving parts, pinch points, and other risks
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Stinging insects/ vermin/ snakes wear pants and boots, and remain wary of walking
 path and potential locations of insects/vermin/snakes. Be aware of animals such as
 dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building

Task 3: Groundwater Monitoring Well Installation

Oversight of drilling activities associated with the installation of groundwater monitoring wells. Three well clusters will be installed with up to 5 wells at each cluster. The deepest well in each cluster will be installed to a maximum depth of 500 feet bgs.

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible and remain aware of moving parts, pinch points, and other risks; wear ear protections (such as earplugs) when drill rigs are operating
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Exposure to site contaminants wear nitrile gloves when handling site material and any equipment that contacted contaminated site material.
- Exposure to leaking equipment fluid wear nitrile gloves if handling leaking material and have a spill kit available near the work area
- Stinging insects/vermin/snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building

Task 4: Monitoring Well Development

Oversight of drilling contractors conducting well development activities. Well development will include a combination of bailing, surging, and pumping to stabilize the filter pack and remove fines from filter pack and well screen.

Potential hazards associated with this task include the following:

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible
 and remain aware of moving parts, pinch points, and other risks; wear ear
 protections (such as earplugs) when drill rigs are operating
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Exposure to site contaminants wear nitrile gloves when handling site material and any equipment that contacted contaminated site material.
- Exposure to leaking equipment fluid wear nitrile gloves if handling leaking material and have a spill kit available near the work area
- Stinging insects/ vermin/ snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building

Task 5: Engineering Survey

Oversight of surveying contractor and collection of GPS coordinates.

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Stinging insects/vermin/snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building
- Working alone if personnel is working alone for the GPS coordinate collection, a check in procedure should be developed with the PM to inform them of personnel's arrival onsite and departure from the site to ensure their safe entrance and exit.

Task 6: Groundwater Well Monitoring

Oversight of contractor to conduct water level measurements and groundwater well sampling. The installed monitoring wells will be sampled quarterly for three quarters after installation and incorporated into the Work Area Monitoring Plan (WAMP)

Potential hazards associated with this task include the following:

- Work in thoroughfares/around traffic wear safety vest, set up traffic cones and use buddy system to watch for traffic
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Stinging insects/vermin/snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building
- Exposure to site contaminants wear nitrile gloves when handling site material and any equipment that contacted contaminated site material.

Task 7: Aquifer Testing

Oversight of contractor conducting aquifer testing. The following task will be conducted as part of the aquifer testing:

- Removal of existing pump and piping
- Deployment of transducers
- 48-hour pumping test
- Collection of groundwater samples
- Removal of pump and restoration of well to original condition

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible and remain aware of moving parts, pinch points, and other risks; wear ear protections (such as earplugs) when drill rigs are operating
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Stinging insects/vermin/snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building
- Exposure to site contaminants wear nitrile gloves when handling site material and any equipment that contacted contaminated site material.

Task 8: Injection Testing

Oversight of the implementation of a series of injection tests to evaluate feasible remediation amendment injection rates and pressures.

Potential hazards associated with this task include the following:

- Work in thoroughfares/around traffic wear safety vest and use buddy system to watch for traffic
- Work around heavy equipment (drill rigs) avoid work around the rig when possible and remain aware of moving parts, pinch points, and other risks; wear ear protections (such as earplugs) when drill rigs are operating
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Exposure to site contaminants and amendments wear nitrile gloves when handling site material, amendments, and any equipment that contacted contaminated site material/amendments. Have a spill kit on hand for any releases.
- Stinging insects/vermin/snakes wear pants and boots, and remain wary of walking path and potential locations of insects/vermin/snakes. Be aware of animals such as dogs on private property
- Heat Stress stay hydrated and take breaks as necessary in the shade or cool building
- Manual Lifting use proper lifting techniques. Use buddy system and engineering controls (such as dolly and cart) for anything over 50 pounds.

Task 9: Mobilization and Demobilization

Traveling to and from the Site, entering and exiting site, mobilization, and demobilization.

Potential hazards associated with this task include the following:

- Driving/traffic defensive driving while operating vehicle; drivers should have valid drivers license; the vehicle should have vaid insurance policy and registration in the glove compartment
- Slip, trip, fall awareness of uneven surfaces and use of steel toe boots
- Traffic around drill rig/heavy vehicle while staging only lead driller may operate drill rig; lead driller should maintain communication with team members while operating drill rig; team members should provide a 20-foot clearance from vehicles
- Site security check in with security office, if available, when arriving on site. All gates and buildings should be secured and/or locked before leaving site.

Task Hazard Analyses (THAs) associated with these tasks are presented in Appendix B.

6.3 Chemical Hazards

The classes of chemicals that are known or suspected to be present that may be encountered while performing site work include the following:

- Chlorinated volatile organic compounds (VOCs)
- Hexavalent Chromium
- 1.4-Dioxane

Controls for these hazards are presented in the THAs included in Appendix B. A summary of these chemical hazards is presented in Appendix C.

6.4 Physical Hazards

The following physical hazards have been identified associated with the work to be performed and the site conditions.

- Compressed Gases
- Downhole Logging
- Drilling (including Indoor)
- Drum and Container Handling
- Heat Stress
- Heavy Equipment
- Lifting Heavy Loads
- Loud Noise/Vibration
- Portable Power/Hand Tool
- Radiation (ionizing and non-ionizing)
- Slips, Trips, and Falls
- Thoroughfares / Traffic
- Urban Environments
- Utility Protection

Controls for these hazards are presented in the THAs included in Appendix B.

6.5 Biological Hazards

The following biological hazards have been identified associated with the work to be performed and the site conditions.

- Allergic reaction to poisonous plants, such as poison oak
- Biting/stinging insects

Controls for these hazards are presented in the THAs included in Appendix B.

7. GENERAL SAFE WORK PRACTICES

The following general safe work practices must be adhered to while performing site work:

- Basic PPE shall be worn, including hard hats, safety glasses, hard-toed boots, gloves
 (canvas and/or nitrile) and high-visibility vests. If conditions allow, the requirement for
 hard hats and hard-toed boots may be reduced with approval of the Project's Health and
 Safety Coordinator and Project Manager.
- Minimize contact with impacted materials. Do not place equipment on the ground. Do not sit or kneel on potentially contaminated surfaces.
- Smoking, eating, or drinking after entering the work zone and before personal decontamination is not allowed. Employees who are suspected of being under the influence of illegal drugs or alcohol will be removed from the site. Workers taking prescribed medication that may cause drowsiness shall not operate heavy equipment and are prohibited from performing tasks where Level C or B personal protective equipment is required.
- Practice good housekeeping.
- Use of contact lenses is not allowed under certain hazardous working conditions.
- The following conditions must be observed when operating a motor vehicle:
 - o Wearing of seat belts is mandatory
 - o The use of headlights is mandatory during periods of rain, fog, or other adverse weather or low-light conditions
 - o A backup warning system or use of vehicle horn is mandatory when the vehicle is engaged in a backward motion
 - o Posted traffic signs and directions from flagmen must be observed
 - o Equipment and/or samples transported in vehicles must be secured from movement
- In an unknown situation, always assume the worst reasonable conditions.

- Be observant of your immediate surroundings and the surroundings of others. It is a team effort to notice and warn of dangerous situations. Withdrawal from a hazardous situation to reassess procedures is the preferred course of action.
- Conflicting situations may arise concerning safety requirements and working conditions.
 These must be addressed and resolved rapidly by the Project's Health and Safety
 Coordinator and PM to relieve motivations or pressures to circumvent established safety policies.
- Unauthorized breaches of specified safety protocol are not allowed. Workers unwilling or unable to comply with established procedures will be asked to leave the work site.

8. EMERGENCY RESPONSE

This section discusses emergency response procedures and response equipment to be maintained on site. A table presenting a list of contacts and telephone numbers for the applicable local and off-site emergency responders is provided inside the front cover of this HASP (after figures). Contractors must provide emergency contact information and injury and emergency response procedures for their field personnel and subcontractors that are overseen by the contractors' personnel.

8.1 <u>Injury and Emergency Response Procedures</u>

In the event of an **injury** to an employee, injury response and reporting procedures must be implemented immediately. In the event that an **emergency** develops under Geosyntec's direct supervision, the following procedures are to be implemented:

- The Project's Health and Safety Coordinator, or designated alternate, should be immediately notified via the on-site communication system. The Health and Safety Coordinator assumes control of the emergency response.
- If applicable, the Health and Safety Coordinator must immediately notify off-site emergency responders (e.g., fire department, hospital, police department, etc.) and must inform the response team of the nature and location of the emergency on site.
- If applicable, the Health and Safety Coordinator may call for evacuation of the site. Site workers should move to their respective refuge stations using the evacuation routes provided on the Site Map.
- For small fires, flames should be extinguished using the appropriate type of fire extinguisher. Large fires should be handled by the local fire department.
- If a worker is injured, injury response procedures must be implemented immediately.
- After an incident has stabilized, incident reporting procedures must be followed.

8.2 Emergency Response Equipment

Emergency response equipment will be maintained in the work area as necessary for this project. Examples of emergency response equipment include first aid kits, fire extinguishers (Type ABC), and eyewash bottles.

9. KEY PERSONNEL AND HEALTH AND SAFETY RESPONSIBILITIES

Project personnel roles and their responsibilities in regard to health and safety concerns on this project are as given below.

Project Manager (PM):

- Approve this HASP and amendments, if any;
- Monitor the field logs for health and safety work practices employed;
- Coordinate with project health and safety coordinator so that emergency response procedures are implemented;
- Check that corrective actions are implemented;
- Check and document that qualified personnel receive this plan and are aware of its provisions and potential hazards associated with site operations, and that they are instructed in safe work practices and familiar with emergency response procedures; and
- Provide for appropriate monitoring, personal protective equipment, and decontamination materials.

Project Health and Safety Coordinator:

- Prepare and implement project HASP and amendments, if any, and report to the Project Manager for action if deviations from the anticipated conditions exist and authorize the cessation of work if necessary;
- Check that site personnel meet the training and medical requirements;
- Conduct pre-entry briefing and daily tailgate safety meetings;
- Check that monitoring equipment and personal protective equipment are operating
 correctly according to manufacturer's instructions and such equipment is utilized by onsite personnel. Calibrate or check calibration of monitoring equipment and record
 results;
- Check that decontamination procedures are being implemented;
- Implement site emergency response and follow-up procedures;
- Notify the health and safety director in the event an emergency occurs; and
- Perform and document weekly inspections.

Health and Safety Director:

- Review and audit HASP and amendments;
- Notify Director of Health & Safety when an emergency occurs;
- Assist with the implementation of the corporate health and safety program; and
- Consult with staff on health and safety issues.

Site Workers

- Provide verification of required health and safety training and medical surveillance prior to arriving at the site;
- Notify supervisors of workplace accommodation requirements as the result of physical limitations or medical conditions;
- Attend pre-entry briefings and daily tailgate safety meetings;
- Immediately report accidents and/or unsafe conditions to the Project's Health and Safety Coordinator;
- Be familiar with and abide by the HASP; and
- Be ultimately responsible for his or her own safety.

10. WORKER TRAINING AND MEDICAL SURVEILLANCE

Personnel involved in field activities subject to OSHA HAZWOPER 29 CFR 1910.120 will be required to participate in both a health and safety training program that complies with criteria primarily set forth by the OSHA HAZWOPER in 29 CFR 1910.120(e) and a medical surveillance program covered under 29 CFR 1910.120(f), or equivalent regulations based on the jurisdiction in which the project is performed.

10.1 Pre-Assignment and Annual Refresher Training

Prior to arrival on site, the Project Manager will be responsible for monitoring that their staff meet the requirements of pre-assignment training (such as 40-hour or 24-hour initial training). In addition, personnel must be able to document dates of attendance at an annual 8-hour refresher and three days of fieldwork under a qualified supervisor. Failure to provide this documentation will prohibit entry to the active work area(s) (i.e., Exclusion Zone).

10.2 <u>Site Supervisor Training</u>

Consistent with OSHA 29 CFR 1910.120 (e)(4), prior to arrival on site, individuals designated as site supervisors require an additional eight hours of specialized training.

10.3 Initial Site Safety Orientation and HASP Review

In addition to complying with 29 CFR 1910(e), site personnel will attend an initial safety orientation during which the HASP and applicable THAs will be reviewed prior to initiating field activities. This review will include the following:

- Understanding the lines of authority regarding health and safety and site personnel roles and responsibilities;
- Information of specific hazard agents related to the site and site operations will be
 discussed, such as health hazards of site chemicals and specific safety hazards of
 processes, tools, and equipment;
- Training in the proper use, maintenance, and decon protocol of PPE and Level(s) of Protection:
- Appropriate work practices and engineering controls to reduce/eliminate exposures to site hazards will be reviewed;
- Personnel will be informed of means for normal site and emergency communication(s);
- If applicable, air monitoring strategies will be discussed to include the frequency/types, action levels, sampling techniques, pre/post calibration techniques;
- Unique/site specific medical surveillance requirements that need to be considered based on site contaminants;
- Understanding site control measures, work zones, and proper decontamination
 procedures for personnel/tools/vehicles, etc. to reduce the potential for both on/off site
 contamination;
- Personnel will be trained to respond quickly and properly in the event of an emergency;
 and
- Personnel involved in specific hazardous activities, such as confined space entry, drum handling, sampling unknowns, etc. will receive specialized training in the appropriate techniques to employ prior to commencing these operations.

10.4 Baseline Medical Surveillance Exam

The baseline medical examination is used to identify physical capabilities and certain medical limitations that may have an impact on the candidate's ability to perform in the position and/or job activity for which he/she is being considered, as well as to establish certain baseline medical parameters. The initial test results can then be compared against future periodic or project-specific monitoring results.

10.5 Periodic/Annual/Biennial Medical Exam

The periodic medical examination is used to evaluate an employee's continued fitness for duty and to assess possible impact(s) occupational exposures may have had on their health status. The periodic examination includes an update to the medical and work history, results of previous occupational exposure assessments, and a detailed medical exam tailored to the job description.

The frequency of the periodic medical exams based on regulatory requirements, the position/work activities of the employee, and the level of exposure to physical, chemical, and biological agents will be determined by the Medical Director of the employer's occupational health services agency.

10.6 Exposure/Activity/Project-Specific Medical Testing

Exposure-specific medical tests and/or evaluation of biological indices may be conducted to establish a baseline for certain project-specific parameters, to monitor the effectiveness of hazard controls, and/or to assess the impact of occupational exposures associated with a particular work activity or project. The Medical Director, in coordination with the employer's H&S Department, will require or recommend an exposure-specific exam when deemed appropriate based on knowledge of project hazards, occurance of employee health symptoms, or an unexpected exposure event. Requests for exposure-specific examinations will be forwarded to the employer's H&S Department, who will process the requests in collaboration with the Medical Director. The Medical Director will determine the type and frequency of the exposure-specific medical exams for employees designated to participate based on sound medical practice, latest toxicology information, and current regulatory requirements.

10.7 Exit Exam

An exit medical examination is offered when an employee leaves the medical surveillance program, either because of termination of employment or because of reassignment to a position not designated or identified to participate in the medical surveillance program. This optional exit examination may be used to assess potential changes in medical status that have occurred during the course of employees' previous work activities, and to establish a medical baseline at the time of departure.

11. MAPS AND SITE CONTROL

11.1 Routes to Hospital and Urgent Care Facility

APPLIES TO ALL TASKS

A suggested hospital and urgent care facility near the site have been identified. Maps to the hospital and urgent care are included after the Table of Contents of this HASP. Both figures also include the facility name and phone number. Contractors and project personnel can provide routes to alternative hospitals and urgent care facilities as deemed appropriate by their H&S standards.

11.2 Site Map

APPLIES TO ALL TASKS

A site map is located inside the cover of this HASP. The site map is intended to show the location of the work zone(s), to provide on-site orientation, and to delineate evacuation routes. Changes may be made to the site map by the Project's Health and Safety Coordinator based on changing site conditions. The site map should be accessible in the work area.

11.3 Buddy System

APPLIES TO ALL TASKS

The buddy system is required when work is performed in hazardous areas. The buddy system includes maintaining regular contact with one or more onsite project personnel, clients, and/or contractors to periodically check on the condition of site workers such that each employee in the work group is observed by (or in verbal contact with) at least one other employee in the work group. For field visits with only one employee onsite, the buddy system shall be implemented via periodic telephone contact with offsite project personnel. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

11.4 Controlled Work Zones

Three controlled work zones, including an Exclusion Zone, a Contaminant Reduction Zone (CRZ), and a Support Zone, are required for the task(s) indicated above. Project personnel must not be allowed into the CRZ or Exclusion Zone or the Work Zone until they have received the proper personal protective equipment (PPE) and they have read, understand, and meet the

requirements outlined in this HASP. The Exclusion Zone is defined as the area on site where contamination is suspected and tasks are to be performed. The CRZ is defined as the area where equipment and workers are to be decontaminated as they leave the Exclusion Zone. The Support Zone is defined as the command area and may serve as a staging and storage area for supplies. The location and extent of the work zones may be modified as necessary as site investigation information becomes available. For sites that do not require the three controlled work zones, the area(s) where work is to be performed shall be called the Work Zone.

Visitors to the site may need to be continually escorted for safety purposes and need to check in with the Project's Health and Safety Coordinator upon visiting the site.

For the tasks identified above, the boundaries of the Exclusion Zone, CRZ, and Support Zone, or the Work Zone, shall be marked using appropriate methods, including but not limited to warning tape, signs, traffic cones, fencing, or other appropriate means.

11.5 Site Access

APPLIES TO ALL TASKS

Certain sites require controlled access to the work area. Examples of access controls include sign in/sign out logs, checking in with guards, and donning identification badges. Project personnel will adhere to the site-specific access requirements and monitor that contractors and other visitors abide by site-specific access control requirements.

11.6 Inspections

APPLIES TO ALL TASKS

Based on the hazards identified for the project, periodic health and safety inspections may be performed. The Health & Safety Inspection Checklist records should be kept on file at the project site. Each contractor is responsible for completing their inspection checklist specific to their work activities. The frequency for periodic inspections will be determined by each contractor responsible for the work activities.

12. TAILGATE MEETINGS

APPLIES TO ALL TASKS

Tailgate meetings must be held daily prior to starting work to discuss important health and safety issues concerning tasks to be performed during that shift. Site workers should also communicate

health and safety concerns associated with the tasks they will be performing. Topics discussed in the tailgate meetings must be documented.

13. STOP WORK AUTHORITY

APPLIES TO ALL TASKS

Project personnel and their contractor personnel have the <u>authority</u> and <u>responsibility</u> to issue a Stop Work Order if unsafe actions and/or conditions are identified. The Stop Work Authority (SWA) process involves a stop, notify, correct, and resume approach for resolving observed unsafe work actions or conditions. The person issuing the work stoppage will first notify workers engaged in or affected by the unsafe activity or condition and require that associated work be stopped. After this Stop Work Order is issued, the project manager and the supervisors for affected or concerned contractors will also be notified. The project manager will document the issuance of the Stop Work Order. Work will not resume until the issues and concerns of the Stop Work Order have been adequately addressed.

14. AIR MONITORING

APPLIES TO TASK: ⊠①	\boxtimes 2		4	<u></u> (5)	6	□ ⑦	8 9	☐ Not Applicable
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Air monitoring will be performed to evaluate airborne chemical and/or dust exposure levels within the breathing zone of site workers. Hazardous conditions may include concentrations that may cause acute or chronic illness, potential oxygen deficient environments, or potential explosive environments. Air monitoring may also be performed to evaluate the adequacy of engineering, administrative, and/or PPE controls. Air monitoring may be "real-time" (e.g., the instrument provides immediate results at the project), using multi-gas meters, photoionization detectors (PIDs), or colorimetric tubes. Personal monitoring may also be performed by collecting samples and forwarding to a laboratory for analysis and quantification.

The type(s) of air monitoring equipment required and associated action levels are outlined in Appendix D. Monitoring equipment must be calibrated based on the manufacturer's requirements. Calibration results and air monitoring measurements must be documented. Based on the results noted and site activities or scope of work changes, the frequency of air monitoring may be adjusted on site by project personnel with the consent of the Project Manager and communication with the contractor's H&S personnel.

15. PERSONAL PROTECTIVE EQUIPMENT

APPLIES TO ALL TASKS

The minimum levels of PPE required for each task are presented in Appendix E. Required equipment and types of protective clothing materials, as well as an indication of the initial level of protection to be utilized, are listed. The level of protection may be upgraded or downgraded by the Project's Health and Safety Coordinator or the contractor's H&S personnel on site according to controls requirements in Appendix Eor according to action levels provided in Appendix D.

If respirators are worn, workers must abide by the requirements of 29 CFR 1910.134.

16. **DECONTAMINATION**

APPLIES TO ALL TASKS

The Project's Health and Safety Coordinator and Project Manager will determine the type and level of decontamination procedures for both personnel and equipment based on evaluation of specific work activities in the controlled work zones. Medical treatment will take precedence over decontamination in the event of a life threatening and/or serious injury/illness. Personnel will perform decontamination in designated and identified areas upon leaving "hot zones" where the potential exists for exposure to hazardous chemical, biological, or environmental conditions.

Decontamination of personnel in Level D (modified) will consist of proper containerization and disposal of coveralls, disposable boots, and gloves (if applicable).

Decontamination of personnel in Level C, if applicable, will consist, at a minimum, of:

- Removal and cleaning/disposal of boot covers, coveralls, and outer gloves;
- Removal, cleaning, and storage of respiratory protection;
- Washing of non-disposable PPE suspected of being contaminated using a soap solution followed by a water rinse; and
- Removal and disposal of inner gloves.

Hand tools and sampling equipment shall be decontaminated as needed by washing in decontamination basins with appropriate solutions, or, if possible, by dry decontamination. Wash solutions and PPE may require disposal at a licensed waste facility.

17. SPILL CONTAINMENT

APPLIES TO ALL TASKS

The task(s) for this project may involve the handling of drums and/or containers that contain stored chemicals, hazardous materials, and/or wastes. The drums and/or containers may have been spilled/dislodged during site activities due to compromised construction of the drum/container, transportation accidents, improper packaging practices, and improper handling of hazardous materials during on/off loading. Containers shall be inspected and their integrity assured prior to being moved and/or handled. If the integrity of the container is in question, the container shall be over packed or its contents transferred. Operations shall be organized and coordinated to minimize movement of such containers. Where spills, leaks, or ruptures may potentially occur, a supply of sorbents shall be located in the immediate area. Additional preventative measures include:

- UN-approved 55-gallon drums, bins, and/or Baker tanks will be inspected for visible defects upon delivery to the site;
- UN-approved 55-galon drums will also be inspected to ensure each drum includes a resealable lid with a small resealable sampling port near the top, or on the side of the drum and that the enclosure is not deformed and/or distorted;
- Drums will not be completely filled to allow for possible expansion of liquid and will be set on wooden pallets to facilitate transport by forklift;
- The storage area will be inspected to check for leaks weekly while the containers are being filled and immediately after a relocation to a temporary on-site storage area; and
- Flat areas will be selected for temporary storage away from high-traffic work areas/zones and storm/sewer drains.

In the event of an unplanned release or spill of unknown or hazardous substances, the site supervisor will designate personnel who will support the spill containment, control, and/or clean-up procedures. The team will request additional off-site emergency response assistance if necessary based on the type of spill, volume, potential toxicity, etc.

The spill area will be isolated and restricted to only authorized personnel designated to assist with the containment, control, or clean-up activity. Authorized personnel will be trained to contain and clean spills from typical materials and quantities used at the project location. Physical barriers will be set up to warn unauthorized personnel to stay clear and evacuate the affected area. The spill, leak, or incident will be assessed by the team and characterized to determine the appropriate course(s) of action(s) to consider:

- Small spills (i.e., maximum volume of 55 gallons of a liquid or 100 pounds of a solid) may be remediated using absorbent materials by designated personnel;
- Large spills (i.e., liquid volumes > 55 gallons or solid weights > 100 pounds) and/or spills of highly toxic materials may require assistance by off-site hazardous materials (HAZMAT) teams;
- Attempts shall be made to identify and stop the source(s) of spillage immediately while donning proper PPE (based on action levels and the air monitoring program) and performing air monitoring;
- The site supervisor will direct spill-response operations and stay at the spill area until it has been cleaned, inspected, and cleared for re-entry; and
- The site supervisor will prepare a spill incident and clean-up report and will communicate findings to the contractor and client.

18. CONFINED SPACE ENTRY

NOT APPLICABLE

There are no tasks for this project involving confined-space entry.

19. GLOBALLY-HARMONIZED SYSTEM (GHS) FOR HAZARD COMMUNICATION

APPLIES TO ALL TASKS

The following procedures must be followed for chemicals <u>brought onto the site</u> by workers (e.g.., decontamination solution, sampling preservatives, injection solution) while performing the tasks of this project:

- Labels on primary chemical containers must not be defaced;
- Chemicals must be stored in appropriate storage containers;
- Secondary containers and storage cabinets must be correctly and clearly labeled;
- Chemicals incompatible with each other must not be stored together;

- Workers must receive training on the chemical hazards; and
- Safety Data Sheets (SDSs) must be added to Appendix F.

When chemicals are used on site, contractors will comply with provisions of their hazard communication program.

20. HASP AMENDMENTS

Over the course of this project, it is possible that the project-specific hazards and working conditions will change. This HASP may be reviewed and amended as necessary to effectively describe the changing working conditions and measures to mitigate the potential health and safety issues that may arise during the project. Amendments to the HASP should provided in Appendix A and/or additional THAs should be added to Appendix B.

Appendix A: HASP Amendments

Discuss details of amendments to this HASP here. Include amendment number, date, and details of amendments.				

Appendix A 30 August 2016

Appendix B: Task Hazard Analyses

TASE	KS		
①	Drilling Oversight and Soil Sampling	6	Groundwater Well Monitoring
2	Geophysical Logging	7	Aquifer Testing
3	Groundwater Monitoring Well Installation	8	Injection Testing Oversight
4	Groundwater Monitoring Well Development	9	Mobilization and Demobilization
(5)	Engineering Survey		

THAs for these tasks are presented in the following pages.

Appendix B 30 August 2016

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION								
TASK:	Drilling O	Prilling Oversight and Soil Sampling						
Project Name:	Omega S	uperfund S	Site OU2					
Project Address:	Los Ange	les County						
			single pass mud rotary, sor e, split spoon, and sonic di		em auger), Lithologic Lo	ogging, Core Sample Collection		
A.2. EMERGENCY RE	SPONS	E Based o	n analysis of worksite factors	, client/regulatory	requirements, availability	of emergency services.		
Consider all Relevant Risk Factor EXPLANATORY NOTES, CLARIFIC		onse Proced	lures (fire/explosion, medical,	chemicals/spills, s	security, site factors, weat	her, communications).		
Available Means of Jobsite En Communication		∨erbal □ Other:	□ Cell Phone	☐ Land Line	☐ 2-Way Radio	☐ On-site alarm/signal system		
To Summon Emergency Police, Fire, Ai		⊠ DIAL 91	1, for external responders	☐ Other:				
Other Emergency Contacts, a (such as security, spill responde								
Suggested Nearest Emergency	,		ame: Presbyterian Intercomm					
	Services		2401 Washington Boulevard, 662) 698-0811	Whittier, Californ	ia 90602)		
Suggested Non-Emergency Ur	gent Care	Facility Nar	me: Urgent Care America, Inc					
		Address: 13470 Telegraph Road, Whittier, CA 90605 Phone #: (562) 906-7766						
Job-site Evacuation P	rocedure,	Rally point will be determined by the contractor carrying out the task.						
Rally Point, Place								
Special Ei Equipment/Pr								
IMPORTANT: After initial eme	rgency res	ponse action	ns and incident stabilization,	contact appropria	ate project personnel (to I	be listed in Part A.1 by contractor)		
A.3. SUMMARY OF WO	ORK ST	EPS, HA	ZARDS, CONTROLS	Based on PART	B, "HAZARD ANALYSIS,"	and worksite/client/project factors.		
Summary/outline of work steps.	/hazards/c	controls, wit	h references to applicable Se	ections in Parts B a	and C, as applicable:			
WORK STEPS			HAZARDS		CONTROLS			
Soil boring advancement Soil characterization/logging/san	npling		Thoroughfares / Traffic		Wear of safety vertraffic	st, use buddy system to watch for		
			Heavy equipment (drill rig)		Avoid area around moving parts/pind	d drill rig when possible, be aware of th points		
			Trip/fall		Use of steel toe be uneven surfaces	oots, be aware and careful on		
		Stinging Insects / Vermin / Snakes		potential location	oots; be aware of walking path and s of insects/vermin/snakes; be such as dogs on private property			
			Utility-related hazards		penetrations; han	arance prior to ground d-auger first 5 feet to ensure no ties will be damaged		
			Storage of bulk materials			vater for decomination will be 55-gallon drums for disposal		
			Exposure to site contaminan	is		s when handling site material and at came in contact with site		
A.4. H&S EQUIPMENT	LIST List	worksite equ	uipment for worker protection	; provide details in	Explanatory Notes, Clarific	rations.		
EXPLANATORY NOTES, CLARIFICATIONS:								

DIVAL	•					
\boxtimes	ROUTINE PPE	Standard work clothes appropriate for task			appropriate for task	
		□ Hard-toed boots/shoes		☑ Noise/hearing protection		
					//reflective vest	
		□ Safety glasses		☐ Ice creepers	(boot attachments)	
		\square Basic PPE for protection from lov	v-hazard chemica	Il contact & dust (nitrile g	oves, Tyvek suit, dust mask, boot covers).	
\boxtimes	ROUTINE H&S			Sun protection (suns)	creen, shade canopy, other)	
	EQUIPMENT/GEAR			☑ Project-supplied drinl	king water and/or hygiene facilities	
				☐ Poison ivy skin wash (Technu or similar)	
		☑ Insect control (repellant, wasp sp	oray, other)	⊠ Vehicle emergency ki	t (flares, lights, reflective device)	
		□ Caution tape		□ Traffic control warning □	g devices (cones, or similar)	
		☐ Other:				
×	NON-ROUTINE	☐ Goggles and/or face shield ☐ Disposable n		-95 dust mask	☐ Fire retardant clothing	
	PERSONAL PROTECTIVE	☐ Chemical protective gloves			☐ Arc Flash Protection	
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)	☐ Full-face resp	oirator (APR), cartridges	☐ Electrical-Hazard-rated boots, gloves	
	(Indicate specific types of PPE in	☐ Outer boots, boot covers ☐ Personal flot		ation device	☐ Personal fall apparatus	
	Explanatory Notes, Clarifications)	□ Other:				
П	SPECIAL HAZARD CONTROLS	☐ Portable GFCI ☐ Locko		out equipment	☐ Ventilation equipment (fan, blower)	
		☐ Eyewash - 15 min. flow	□ Emergency d	leluge shower	☐ Air horn, alarm	
		☐ Other:				
\boxtimes	DECON,	☑ Receptacle for disposable PPE		g provisions	□ Decon solution, related supplies	
	PPE DISPOSAL	☐ Other:	-			
\boxtimes	AIR MONITORING EQUIPMENT, O				ordance with procedures in Part C:	
	EQUIPMENT FOR WORKER EXPOS	URE TESTING PID to be used to a	ssess potential ex	xposure to chlorinated VC	US in the breathing zone.	

B.1. R	OUTINE HAZARD PREPAREDNES	SS This section required for all tasks.					
Explai	natory Notes, Clarifications:						
☑ Gen☑ Wea☑ Plan☑ Wor☐ Illun	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☑ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ☑ Weather/climate-related hazards – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ☑ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ☑ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). ☐ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate. ☑ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs.						
		e site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.					
☑ Han☑ Eye☑ Foot☑ Hear	d protection - Wear protective work glo protection - Wear safety glasses (with si protection, rough terrain - Wear work ring protection – use earplugs, earmuffs	Vear hardhat or "bump cap" as appropriate for hazard. ves appropriate for the hazard and work tasks. de shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection. boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions. (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA. rotection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.					
☐ Mar ☐ Kniv tool ☑ <i>Wor</i>	nual hand tools - proper tool for the job, res, cutting tools - Utility/folding/collaps s with automatically-retracting blades, o	the site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire." ible knives and fixed open-bladed knives/cutting tools are <u>not</u> permitted, unless specifically authorized. Cutting or with enclosed/guarded blades are permitted. nachinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection). t/machinery – See Section B.5.					
Secur	ity – Delineate site-specific HS aspects,	as appropriate, in "Explanatory Notes, Clarifications," above. res for personal security (such as buddy system, security service, work scheduling, other measures)					
⊠ Rounno t □ Unfa	Routine Driving Hazards - Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☐ Routine work travel - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☐ Unfamiliar location - Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Long Distance or During Sleep Hours - Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ☐ Unfamiliar vehicle - Become familiar with vehicle operational controls and handling characteristics before operating vehicle.						
		· · · · · · · · · · · · · · · · · · ·					
	PECIAL DRIVING/TRAFFIC/TRAN IATORY NOTES, CLARIFICATIONS:	SPORTATION HAZARDS Applicable Not Applicable, Not Anticipated					
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	 □ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. □ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. □ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. 					
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment. □ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. □ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. □ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secured.						
⊠	- WODIGITE.						
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	 □ Coordinate with rail company and implement required safety and security measures. □ Site workers to receive safety training for railroad work. 					

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	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	□ Coordinate safety requirements with Airport personnel and implement required safety measures. □ Site workers to receive safety training for railroad/airport work.
	TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	☑ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"
B.3. \	NATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated
EXPLAI	NATORY NOTES, CLARIFICATIONS:	
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation WORK NEAR WATER HAZARDS OR	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate.
	ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards."
B.4. FALL HAZARDS ☐ Applicable ☐ Not Applicable, Not Anticipated		
EXPLANATORY NOTES, CLARIFICATIONS:		
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Ensure safe access to elevated work location □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net
	LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 □ Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. • Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. • Do not use metal (conductive) ladder near electrical hazard. • Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. • Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. • Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.
	SCAFFOLD Supported scaffold Suspended scaffold Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse. AERIAL LIFT Hazards: Falls, overhead hazards,	 Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use. Follow safe work practices: Operators to be sufficiently trained, experienced and qualified.
	struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use.
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

	POWERED TOOLS, EQUIPMENT, N	MACHINERY	☐ Applicable	☑ Not Applicable, Not Anticipated
EXPLAN	NATORY NOTES, CLARIFICATIONS:			
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	 Use tool in a Ensure guard Use PPE or o Provide train Stay clear of For spark/he Use vise/clar Use respirato See fuel-safet 	s to ensure safe operating condition be iccordance with manufacturer's specific of a re in place and no hazardous equipather safety practices, as appropriate, ning or verify operator competency for hazard zone, "line of fire," when work at generating tool, control fire hazard mp/work bench or other appropriate	fications. In present modifications. If or eye/hearing/hand/head/body protection. If or use of power tool. It is is included to it is incl
	OPERATION OF EQUIPMENT/MACHINERY Point-of-operation hazards Pinch points, moving parts 'Struck-by,' 'caught between' Hot surfaces, heat Extension cords, flexible wire Fuel related (gas or liquid) Hydraulic pressure Pneumatic pressure Kinetic, stored energy Noise Emissions, discharge gases Working at heights, falls Lifting, repetitive motion Illumination Electrical	 Arrange wor Use equipme Ensure point devices; do Secure long l Heed warnin Implement le Use safe liftin Implement sa For climbing/ For electrical Operate fuel- 	t-of-operation, mechanical power train not override interlocks, guards, prote hair/loose clothing/hanging jewelry n ng signs/labels, keep safe distance; av ockout/tagout for repairs/adjustment ng practices for movement of heavy p afe work practices for compressed air	achinery. anufacturer's use and safety instructions. ansmission, other moving parts are guarded with protective active devices. alear moving/rotating parts. oid locations of "struck by" and "caught between" hazards. ats/tooling changes. oortable equipment a pressurized systems (pneumatic/hydraulic), stored energy. alipment, see Section B.4., "Fall Hazards." d location.
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY		== :	(lockout/tagout), provide lockout/tagout locks and ersonnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	General safe Hot work pe Operator pro Fire hazard c Protect near For gas weldin Damage; nev For arc weldin See Section B	work practices: rmit system to be implemented. operly protected (eye protection, clot controls (watcher, fire extinguisher, w by personnel from hazardous UV, IR I ng/cutting, use gas cylinder safe prac ver secure gas cylinders to metal benc ng, follow electrical safe work practic 8.13., "Commercial Chemical Products	hing, apron, etc.). vater, isolate combustibles). ight (shielding, curtain). tices (secured, upright, caps on when not in use, prevent th used for arc welding). es. See Section B.8., "Electrical Hazards." ," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed☐ Use eye prote☐ Ensure air tar	ection. nk, hoses, fittings are in good repair u	sure to 30 psi or below, equip nozzle with chip guard. sing factory fittings.
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accord Keep genera Never use in Provide for volume Use hearing Use power column Use ground See Section I Shut down e 	dance with manufacturer's instruction and work area dry. Idoors, or near building air intake ven ventilation and/or air monitoring whe protection in close proximity to operatords/extension cords specified by insfault circuit interrupters (GFCIs) in acceptable, "Electrical Hazards."	ts due to carbon monoxide hazard. re hazardous accumulation of exhaust emissions is possible. ating generator, as needed.

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: П Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in • For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** ■ Applicable ☐ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** This section applies to single pass mud rotary drilling, sonic drilling, and hollow-stem auger. Always verify that drill rig has sufficient clearance from utility lines before beginning work. DRILLING X Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. IMPORTANT! This work may/will ☑ Follow safe work practices per Section B.9., "Utility Related Hazards" X include close proximity to overhead electric utility lines. B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT ■ Applicable ☐ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** HEAVY EQUIPMENT ⊠ Follow general safe work practices for heavy equipment: X Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over, • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards · No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. · Leaks or defective safety equipment should be repaired before use. · Operators required to use seatbelts. Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. · Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: П Hazards: • Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. injury from falling load • Crane operator will remain at the controls at all times during operation. - crane tipping over due to · Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers

Keep area beneath suspended loads clear of personnel.

DRAF		
DRAF	– injury from mechanical hazards	Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 ☑ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 ☑ In addition to general safety practices for heavy equipment (above), as applicable: Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 □ Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	⊠ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
\boxtimes	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
	-	plicable Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 □ Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v	□ Implement electrical safe work practices pertaining to: • Worker training/qualification (Level 1, Level 2, Level 3) • General electrical safe work practices, grounding, use of GFCIs • Safe work practices during diagnostics/troubleshooting, maintenance, repair • Safe design features for electrical equipment

☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/transformer

ENERGY

LOCKOUT/TAGOUT OF ELECTRICAL

IMPORTANT! This work may/will

include close proximity to electric utility lines.

Arc flash protection

☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and

devices, training workers, designate "authorized" personnel, notify "affected" personnel.

☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.9.	UTILITY RELATED HAZARDS	1 Applicable		□ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	und utilities are announted		
WIII na	nd-auger first 5' to ensure no undergrou OVERHEAD, ABOVE-GROUND	und utilities are encountered ☑ Maintain proper clearance, emplo	ov other appropriate precautions	for the conditions.
	UTILITIES	Z mamam propor disaranssy simple		
\boxtimes	UNDERGROUND UTILITIES	Confirm appropriate underground penetrations, and employ other u		
		□ Hand digging or vacuum post-holi	= -	
B.10.	CONFINED SPACE ENTRY, HAZA	ARDOUS ENCLOSED SPACES	☐ Applicable	
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	CONFINED SPACE(S)	☐ Develop effective site-specific en	ry procedure per applicable regu	llatory requirements:
	Potential/actual hazards:	Personnel to be trained/qualifi		
	☐ Atmospheric hazards: ☐ Flammable/explosive	 Hazards properly characterized Use equipment necessary for s 	 afe entry (for access, retrieval, PP	PF air monitoring ventilation)
	☐ Oxygen deficiency	 Develop measures for emerger 		L, all monitoring, ventilation,
	☐ Hydrogen sulfide	- IMPORTANT:		
	☐ Other toxic		ty measures above in Explanator	
	☐ Combustible dust	– Modify this THA or attach	separate confined space safety p	blan/permit, as appropriate
	☐ Electrical	☐ Protect non-entry personnel work	king near confined spaces thru co	ntrol measures to prevent unauthorized
	☐ Mechanical, engulfment, entrapment, stored energy	entry (such as safety orientation,		
	entrapment, stored energy			
	HAZARDOUS ENCLOSED OR	☐ Use personal protective clothing		I, biological hazards.
	INDOOR SPACE(S)	☐ Use respiratory protection, if nec☐ Duct equipment exhaust to outdo		whatet ventilation
	☐ Indoors (occupied or vacant)☐ Machine/equipment pit/vault			uce fresh air/dissipate atmospheric hazards.
	☐ Basement/crawl space	☐ Conduct air monitoring, as appro		
	☐ Tunnel, shaft, gallery	\square For a trench/excavation, also see	subsection entitled "Trenching/E	xcavation" in Section B.7. "Construction,
	☐ Trench, excavation	Heavy Equipment, Lift Equipmen		
	☐ Hazardous exhaust or emissions☐ Building-related hazards	☐ If space classified/regulated as a	'confined space," follow confined	space entry requirements (above).
D 11	STORAGE OF BULK MATERIALS	S Applicable		☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	B Mphilicaple		I Not Applicable, Not Articipated
	e of equipment, soil cuttings, and decon	water anticipated.		
\boxtimes	STORAGE OF BULK MATERIALS	i	•	cked, tied, wrapped, or otherwise secured)
_	<i>(</i> 2.0	to prevent tipping, sliding, rolling	- · · · · · · · · · · · · · · · · · · ·	and shelp to make the control
	(for Storage of Hazardous Materials, See Section B.13.)	☑ Do not exceed load limits of racks☑ Ensure stored materials do not bl		are stable, robust, secure.
B 12	INFECTIOUS / ALLERGENIC BIO	•	ock disies, passageways.	☑ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	тиштиво штириодого		2 Hot rippinouslo, not runio patou
	☐ Wastewater, sewer	□ Low hazard - use basic hygiene pr□ More severe hazard - add protect		
	☐ Bird Guano	☐ For human pathogens use "Unive	- · · · · · · · · · · · · · · · · · · ·	
	☐ Mold, fungi, Valley Fever☐ Bloodborne pathogens	,		3
	☐ Other (describe above)			
R 13	COMMERCIAL CHEMICAL PROD	UCTS Applicable		☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	20.0 Lippilouble		
	PRODUCTS REGULATED BY HAZARD			nin same work shift, containers labelled
	COMMUNICATION STANDARD	properly, workers trained/orienters For subcontractor use of chemica		ring safety meetings
		☐ Conduct air monitoring, as appro		
	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on		
🖳	nonflammable)	☐ Propane cylinders not in use mus		- ·
		☐ Ensure acetylene cylinders NOT s	_	
		\square Store/use in a manner to prevent		
		\square Segregate oxygen and fuel gases	by distance (20') or barrier.	

DRAF	т						
]	☐ Control i	gnition sources.				
	:		king" signage at cylinder storage area for flammable gas				
			e in a manner to control inhalation exposure hazards, P				
	11011150	-	orage (flam. storage cabinets, other storage precaution	ns).			
			er fuel safety can (metal fuel can preferred).				
	i i		gnition sources.				
			ng and bonding where appropriate.				
			vith care, use appropriate eye/face/skin protection.				
			, deluge shower, drench hose, hand washing (with water				
	TOXIC		substances, use/store in a manner to control exposure	-			
	FNAICCIONIC FDONA FLIFI	skin absorption); use PPE as appropriate, conduct air monitoring as appropriate. Position outdoor personnel upwind of exhaust source.					
\boxtimes	A CA A DI LOTTO AL LA IDILIOTO LA L			atmospharia hazarda			
	DDOCECCEC	☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot.					
	□ Cacolino		air monitoring as appropriate (see Part C, "Air Monitori				
	☐ Diesel	_ oondact	an morntoring as appropriate (see rait o, 7 in Mornton				
	☐ Propane/Natural Gas						
	☐ Welding/cutting/hot work						
	□ Vehicle/equipment exhaust						
	☐ Other						
	OTHER HAZARDS	☐ Describe	other hazardous substances and safety measures unde	r "Explanatory Notes, Clarifications," above.			
П	CHEMICAL/HAZMAT STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar.					
		☐ Ensure incompatible chemicals are segregated.					
	requirements include special	☐ Provide s	econdary containment.				
	provisions for chemical storage.	☐ Locate sp	pecial safety equipment near chemical storage				
	ITE CONTAMINANTS, CHEMICAL W	ASTES		□ Not Applicable, Not Anticipated			
	NATORY NOTES, CLARIFICATIONS:						
	ite COCs include chlorinated VOCs, 1,4-dio		exavalent chromium.				
	ALL THAT APPLY. Provide explanatory not			T =			
	/groundwater contaminants (historical rele	ease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants			
	tent release, known high concentrations		☐ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H ₂ S)			
	mer chemical disposal site, landfill van fill, residual contaminants		□ BTEX, petroleum derived VOCs □ Fuel oils, petroleum, waste oil, lubricants	☐ Cyanides, hydrogen cyanide (HCN) ☐ Asbestos			
	ntainerized waste (drums, process equipme	nt)	✓ Metals, metal compounds, metal dusts	☐ Lead paint			
	ied drums (known or potential)	111)	☐ Elemental mercury	 ☑ Pesticides, herbicides, fungicides 			
	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	□ Sensitizers			
	ntaminated building surfaces		□ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants			
	exploded ordnance		☐ Potential for flammable vapors	☑ Other (see Explanatory Notes, above)			
□ Ехр	losive dust		\square Potential for flammable gas (methane)				
\boxtimes	FOR WORK CONSISTING OF CLEANUP OF	PERATIONS	, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION	IS at an "UNCONTROLLED HAZ. WASTE SITE"			
	(per HAZWOPER, 29 CFR 1910.120), imp						
	· · · · · · · · · · · · · · · · · · ·		Zone(s), Contaminant Reduction Zone(s) and Support Z	Cone (aka EZ, CRZ, SZ)			
			azards per OSHA Hazard Communication Standard. cations and other relevant site-specific information.				
		-	0-hour training, current 8-hour refresher, 3 days superv	rised field experience.			
	 Site supervisor(s) required to l 						
	 Site workers in EZ or CRZ to page 	articipate in	Medical Monitoring program, as applicable.				
			orker protection via engineering controls, work practice				
	g .	•	s, spill containment, emergency preparedness and respo				
	-		ee Part C, "Air Monitoring, Worker Exposure Monitorin	=			
			sufficiently detail site-specific procedures for the above	e elements, as appropriate for the work.			
			STE BUT NOT REGULATED BY HAZWOPER Themical bazards thru safety training/orientation and ay	vailability of hazard information			
			themical hazards thru safety training/orientation and avexposure through engineering controls, work practices,				
	•		itor/evaluate worker exposure, as applicable.				
	OFF-SITE MIGRATION OF		ment controls to minimize hazard migration (dust suppr	ression, covers, foam, etc.)			
Ш	CONTAMINANTS		nunity/perimeter air monitoring to be conducted per pe				
\boxtimes	SPILL CONTAINMENT, CONTAINERS		be above any site-specific procedures for spill containm				
	i	1					

B.15.	15. RADIATION HAZARDS (Other than Sunlight) ☐ Applicable ☐ Not Applicable, Not Anticipated						
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:						
	IONIZING RADIATION		escribe hazards & safety measures above in Explanatory Notes, Clarifications. onduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").				
	NON-IONIZING RADIATION		Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").				
B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION ☐ Applicable ☑ Not Applicable, Not Anticipated							
B.16.	HAZMAT/DANGEI	ROUS GOODS SI	HIPPING/TRAI	NSPORTATION		⊠ Not	Applicable, Not Anticipated
	HAZMAT/DANGEI (S) OF TRANSPORT:	ROUS GOODS SI	HIPPING/TRAI □ Rail	NSPORTATION ☐ Air	☐ Sea	☐ Inland Waterway	Applicable, Not Anticipated ☐ International
MODE	(S) OF TRANSPORT: RTANT: Ensure that each	□ Road th individual who wi	☐ Rail	☐ Air shipping/transporta	☐ Sea ation of hazardous mat	☐ Inland Waterway	☐ International ed training (awareness, function-

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Not Applicable, Not Anticipated						Not Applicable, Not Anticipated
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:						
	AIR-TESTING PARAMETERS	☑ VOCs, GASES ☑ PID, Lamp energy: 10.6 eV ☐ FID ☐ Carbon monoxide ☐ Hydrogen sulfide ☐ Oxygen (O₂)				☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each para ☐ Other:	nmeter
	ACTION LEVELS FOR O2/LEL	□ LEL	>23.0% - venti Confirm at lea At <10% LEL -	st 12% oxygen is present Continue working, conti Immediately withdraw fr	table lev to ensur nue to m om area.	vels, or use Level B and control f e accuracy of LEL readings. onitor LEL levels Resume work ONLY after LEL r	eadings reduced to <10%.
	ACTION LEVELS FOR TOXICS (sustained breathing zone concentrations)	Parameters		Level D, Modified D* < <u>5</u> ppm < 35 ppm < 10 ppm < <u>mg/m³</u>	zone le 5 25 > 25 ≥35 ppr ≥10 ppr	els C or B*, as indicated below, vel to concentration acceptable ppm to <u>25</u> ppm: Level C (air ppm: Level B (air-supplied respira m - Level B (air-supplied respira m - Level B (air-supplied respira g/m³ - Level C (air-purifying respira	purifying respirator) pirator) ator) tor)
*	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)						
C.2.	OTHER WORKER E	EXPOSURE N	MONITORING	□ Applicable			Not Applicable, Not Anticipated
☐ Wip	Sampling (sample colle be/Bulk Sampling (to e NATORY NOTES, CLARI	valuate worker	•	☐ Ionizing o		izing Radiation Testing	☑ Heat Stress Testing☐ Other
			he summer. Sta	ındard heat stress precau	itions sho	ould be taken.	

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.			
	Printed Name	Signature	Date
THA PREPARED BY:			
(minimum one person)			
THA	Printed Name	Signature	Date
REVIEWED/ APPROVED BY:			
(minimum one person)			

D.2. FIELD CREW ACKNOWLEDGEN	MENTS				
CONTRACTOR'S FIELD CREW Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.					
Printed Name	Signature	Employee No.	Date		
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	IA was made available to you, and you had an opportunit	y to ask guestions about the information herein.			
Printed Name	Signature	Company Name	Date		

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION					
TASK:	Geophysical Logg	ing			
Project Name:	Omega Superfund	mega Superfund Site OU2			
Project Address:	Los Angeles Cour	nty			
Description of Task & Worksite:	Geophysical loggi	ng of bore holes using electrica	lly operated downho	ole logging probes	
A.2. EMERGENCY RES	SPONSE Based	on analysis of worksite factors, c	lient/regulatory requir	rements, availability of emergency services.	
Consider all Relevant Risk Factor EXPLANATORY NOTES, CLARIFIC		edures (fire/explosion, medical, ci	nemicals/spills, securit	y, site factors, weather, communications).	
Available Means of Jobsite Em Communication/			☐ Land Line	☐ 2-Way Radio ☐ On-site alarm/signal system	
To Summon Emergency Police, Fire, Am		911, for external responders	☑ Other:		
Other Emergency Contacts, as (such as security, spill responder					
Suggested Nearest Emergency		l Name: Presbyterian Intercommu			
		s: 12401 Washington Boulevard, \ f: (562) 698-0811		502 ee Directions in HASP	
Suggested Non-Emergency Urgo	ent Care Facility	Name: Urgent Care America, Inc.		55 511 50110110 111111101	
		: 13470 Telegraph Road, Whittier	····· -	No Directions in HACD	
Job-site Evacuation Pro		Phone #: (562) 906-7766 See Directions in HASP Rally point will be determined by the contractor carrying out the task.			
Rally Point, Place of		,	, 3		
Special Em Equipment/Pro					
IMPORTANT: After initial emer	gency response act	ions and incident stabilization, co	ntact appropriate pro	oject personnel (to be listed in Part A.1 by contractor)	
A.3. SUMMARY OF WO	RK STEPS, H	AZARDS, CONTROLS	Based on PART B, "H	AZARD ANALYSIS," and worksite/client/project factors.	
Summary/outline of work steps/	hazards/controls, v	vith references to applicable Sect	ions in Parts B and C,	as applicable:	
WORK STEPS		HAZARDS		CONTROLS	
Advancement of spool connected logging tooling down boreholes/n		Throroughfares / Traffic		Wear safety vest, use buddy system to watch for traffic	
		Heavy equipment (geophysical logging tools)		Avoid area around logging equipment when possible, be aware of moving parts/pinch points	
		Trip/fall		Use of steel toe boots, be aware and careful on uneven surfaces	
		Stinging Insects / Vermin / Snal	Kes	Wear pants and boots; be aware of walking path and potential locations of insects/vermin/snakes; be aware of animals such as dogs on private property	
		Exposure to site contaminants		Wear nitrile gloves when handling site material and any equipment that came in contact with site material	
A.4. H&S EQUIPMENT L		equipment for worker protection; p	rovide details in Explar	natory Notes, Clarifications.	
EXPLANATORY NOTES, CLARIFICA	TIONS:				
ROUTINE PPE	:	ard work clothes appropriate for ta	i	Work gloves appropriate for task	
_	⊠ Hard- ⊠ Hardh	toed boots/shoes		Noise/hearing protection High-visibility/reflective vest	
	⊠ Safety			lce creepers (boot attachments)	
	L	PPE for protection from low-hazard	<u>4</u>		

\boxtimes	ROUTINE H&S				Sun protection (suns	creen, shade canopy, other)
	EQUIPMENT/GEAR				☑ Project-supplied drin	king water and/or hygiene facilities
			eyewash bottle(s)		☐ Poison ivy skin wash	(Technu or similar)
			ol (repellant, wasp s	pray, other)	☑ Vehicle emergency ki	t (flares, lights, reflective device)
		⊠ Caution tap	e		☐ Traffic control warnir	ng devices (cones, or similar)
		☐ Other:				
\boxtimes	NON-ROUTINE	☐ Goggles and	l/or face shield	☐ Disposable n	-95 dust mask	☐ Fire retardant clothing
	PERSONAL PROTECTIVE	☐ Chemical protective gloves			pirator (APR), cartridges	☐ Arc Flash Protection
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)		☐ Full-face respirator (APR), cartridges		☐ Electrical-Hazard-rated boots, gloves
	(Indicate specific types of PPE in	☐ Outer boots, boot covers		Personal flotation device		☐ Personal fall apparatus
	Explanatory Notes, Clarifications)	☐ Other:				
	SPECIAL HAZARD CONTROLS	☐ Portable GF	CI	☐ Lockout/tage	out equipment	☐ Ventilation equipment (fan, blower)
		☐ Eyewash - 1	5 min. flow	☐ Emergency of	leluge shower	☐ Air horn, alarm
		☐ Other:				
\boxtimes	DECON,	□ Receptacle 1	for disposable PPE		ng provisions	□ Decon solution, related supplies
	PPE DISPOSAL	☐ Other:				
\boxtimes	AIR MONITORING EQUIPMENT, O	THER	List equipment/de	evices to be broug	ht to worksite; Use in acco	ordance with procedures in Part C:
	EQUIPMENT FOR WORKER EXPOS	URE TESTING	PID to be used to	assess potential e	xposure to chlorinated VC	Cs in the breathing zone.

B.1. R	OUTINE HAZARD PREPAREDNES	S This section required for all tasks.					
	Explanatory Notes, Clarifications:						
-	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ Gene☑ Wea☑ Plan☑ Wor☐ Illun	 General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ✓ Weather/climate-related hazards - heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ✓ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ✓ Worksite traffic hazards - Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). ✓ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate. ✓ Lifting, manual material handling - use proper lifting procedures, seek help for >50 lbs. 						
Routii	Routine Personal Protection – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ Hand☑ Eye☑ Foot☑ Head☐ Dust	 ☑ Head protection from overhead hazards - Wear hardhat or "bump cap" as appropriate for hazard. ☑ Hand protection - Wear protective work gloves appropriate for the hazard and work tasks. ☑ Eye protection - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection. ☑ Foot protection, rough terrain - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions. ☑ Hearing protection – use earplugs, earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA. ☐ Dust, unsanitary conditions – For general protection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed. 						
☑ Man☐ Knivtool☑ Wor	Tools, Equipment, Machinery – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☑ Manual hand tools - proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire." ☐ Knives, cutting tools - Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are not permitted, unless specifically authorized. Cutting tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. ☑ Working near powered tools/equipment/machinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection). ☐ Operation/use of powered tools/equipment/machinery – See Section B.5.						
☐ High		as appropriate, in "Explanatory Notes, Clarifications," above. res for personal security (such as buddy system, security service, work scheduling, other measures) ure with supervisor/project manager.					
Routine Driving Hazards - Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☐ Routine work travel - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ☐ Unfamiliar location - Plan travel route before driving (assemble maps, enter destination in GPS). ☐ Long Distance or During Sleep Hours - Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ☐ Unfamiliar vehicle - Become familiar with vehicle operational controls and handling characteristics before operating vehicle.							
B.2. S	PECIAL DRIVING/TRAFFIC/TRAN	SPORTATION HAZARDS ☐ Not Applicable, Not Anticipated					
EXPLAN	IATORY NOTES, CLARIFICATIONS:						
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	 □ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. □ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. □ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. 					
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	 □ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. □ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. □ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure. 					
⊠	WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	 ☑ Wear reflective vests where exposed to traffic hazards. ☑ Where possible, park vehicles as protective shield from oncoming traffic. ☑ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☑ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☑ Use DOT-trained flaggers or police detail where appropriate or required. 					
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	 □ Coordinate with rail company and implement required safety and security measures. □ Site workers to receive safety training for railroad work. 					

DRAF	Т	
	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.
	TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	⊠ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"
B.3. \	WATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate.
	WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards."
B.4. I	FALL HAZARDS 🔲 Applicable	e Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	Constal full protection requirement thresholds, required @ . 41 (industrial . 41 (construction) . 101 (conffolds)
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Use tether or positioning device □ Ensure safe access to elevated work location □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net
	LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.
	SCAFFOLD Supported scaffold Suspended scaffold Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use.
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.5. POWERED TOOLS, EQUIPMENT, MACHINERY ☐ Applicable ☐ Not Applicable, Not Anticipated					
NATORY NOTES, CLARIFICATIONS:	41- a - 44- a - 4- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1-		atoute an automorphism of the contract of the		
 POWERED HAND TOOLS	The attached wire		ator to operate geophysical logging equipment		
□ Battery-operated □ Electric-powered, 120v/240v □ Fuel-powered □ Pneumatic □ Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	Inspect tools Use tool in a Ensure guard Use PPE or c Provide trair Stay clear of For spark/he Use vise/clar Use respirato See fuel-safe	s to ensure safe operating condit accordance with manufacturer's s ds are in place and no hazardous other safety practices, as appropr ning or verify operator competen f hazard zone, "line of fire," wher eat generating tool, control fire h mp/work bench or other appropr	equipment modifications. iate, for eye/hearing/hand/head/body protection. cy for use of power tool. working near where power tools are used. azards, segregate combustible/flammable materials. riate means to hold/secure the work piece. her appropriate means to control inhalation hazard. mmercial Chemical Products."		
OPERATION OF EQUIPMENT/MACHINERY □ Point-of-operation hazards ⊠ Pinch points, moving parts ⊠ 'Struck-by,' 'caught between' □ Hot surfaces, heat ⊠ Extension cords, flexible wire ⊠ Fuel related (gas or liquid) □ Hydraulic pressure □ Pneumatic pressure □ Kinetic, stored energy □ Noise □ Emissions, discharge gases □ Working at heights, falls ⊠ Lifting, repetitive motion □ Illumination ⊠ Electrical	Arrange wor Use equipmont Ensure point devices; do Secure long Heed warnint Implement low Use safe lifting Implement same for climbing/ For electrical Operate fuel-	t-of-operation, mechanical powe not override interlocks, guards, p hair/loose clothing/hanging jeweng signs/labels, keep safe distance lockout/tagout for repairs/adjust ing practices for movement of hea afe work practices for compressed (fall hazards associated with larged I hazards, see Section B.8., "Electropowered equipment in well ventions."	ht/machinery. h manufacturer's use and safety instructions. r transmission, other moving parts are guarded with protective protective devices. elry near moving/rotating parts. e; avoid locations of "struck by" and "caught between" hazards. ments/tooling changes. evy portable equipment d air, pressurized systems (pneumatic/hydraulic), stored energy. e equipment, see Section B.4., "Fall Hazards."		
LOCKOUT/TAGOUT OF HAZARDOUS ENERGY		== :	cices (lockout/tagout), provide lockout/tagout locks and ed" personnel, notify "affected" personnel.		
WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	General safe Hot work pe Operator pro Fire hazard o Protect near For gas weldi Damage; nev For arc weldi	work practices: ermit system to be implemented. operly protected (eye protection controls (watcher, fire extinguish rby personnel from hazardous UN ing/cutting, use gas cylinder safe ver secure gas cylinders to metal ing, follow electrical safe work pr. 3.13., "Commercial Chemical Proc	, clothing, apron, etc.). er, water, isolate combustibles). /, IR light (shielding, curtain). practices (secured, upright, caps on when not in use, prevent bench used for arc welding). actices. See Section B.8., "Electrical Hazards." ducts," for hazards of welding rods (toxic metals), welding gases.		
COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed☐ Use eye prote☐ Ensure air tar	d air is used for cleaning, restrict ection. nk, hoses, fittings are in good rep			
PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accor Keep genera Never use in Provide for v Use hearing Use power c Use ground See Section Shut down e 	dance with manufacturer's instruator and work area dry. Indoors, or near building air intake ventilation and/or air monitoring protection in close proximity to cords/extension cords specified befault circuit interrupters (GFCIs) B.8., "Electrical Hazards."	vents due to carbon monoxide hazard. where hazardous accumulation of exhaust emissions is possible. operating generator, as needed.		

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in • For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** □ Applicable EXPLANATORY NOTES, CLARIFICATIONS: DRILLING ☐ Follow safe work practices, as applicable: П Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill riq to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. IMPORTANT! This work may/will ☐ Follow safe work practices per Section B.9., "Utility Related Hazards" П include close proximity to overhead electric utility lines. B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT Applicable ■ Not Applicable, Not Anticipated EXPLANATORY NOTES, CLARIFICATIONS: Heavy equipment refers to geophysical logging tools and portable generator **HEAVY EQUIPMENT** ☑ Follow general safe work practices for heavy equipment: Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over, • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards · No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. · Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: П Hazards: Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. - injury from falling load · Crane operator will remain at the controls at all times during operation. - crane tipping over due to · Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers - injury from mechanical hazards Keep area beneath suspended loads clear of personnel.

• Rigging procedures – see Mechanical Lifting, Rigging, below.

DRAFT MECHANICAL LIFTING, RIGGING ☐ In addition to general safety practices for heavy equipment and cranes (above), as applicable: X Applies to lifting by crane, truck-· Coordinate lifting operations with competent person. mounted boom rig (e.g. drill rig), · Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. mechanical/electrical hoist, similar · Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, equipment. and used in a manner as to protect from damage. Hazards: falling loads, personnel • Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. under suspended loads. · Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use. FORKLIFT ☑ In addition to general safety practices for heavy equipment (above), as applicable: X Hazards: Struck-by, run-over, · Qualified operator, per established forklift training (certificate is required). overhead hazards, caught between • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. (pinch points), roll over, fluid leaks. · Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed. AFRIAL LIFTS ☐ See Section B.4., "Fall Hazards" TRENCHING/EXCAVATION \square Safe work practices when personnel will enter trenches/excavations: П Hazards: Cave-in, hazardous · Activities under supervision/oversight of competent person, daily inspection. atmosphere, structures & Excavated materials placed at least 2' from trench sidewall. foundations, falls into excavations · Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. • Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. • Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . · Workers in trenches to be within 25 feet of ladder or sloped entryway. · Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces" **IMPORTANT!** This work may/will ☑ Follow safe work practices per Section B.9., "Utility Related Hazards" X include close proximity to overhead and/or underground utility lines. DEMOLITION ☐ Develop/implement demolition safety plan. П BLASTING ☐ Develop/implement blasting safety plan. П PUBLIC AT RISK, SITE SECURITY ☑ During site operations protect public (overhead protection, barriers, warning signs). X ☐ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. □ Lock/secure hazardous materials and/or equipment. **B.8. ELECTRICAL HAZARDS** ☑ Applicable ☐ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** BASIC ELECTRICAL HAZARDS TO X SKILLED NON ELECTRICAL WORKERS · Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Equipment/tool use/operation, use • Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. of extension cords, working near • Use extension cords/power cords properly, prevent damage, take out of service if damaged. electrical equipment. · Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. · Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Hazards: Electrical shock, secondary • Ensure live parts are guarded, enclosures secure. hazards (falls, other injuries). · Enclosures, circuits properly labeled. HANDS-ON ELECTRICAL WORK BY ☐ Implement electrical safe work practices pertaining to: П **ELECTRICAL WORKER/TECHNICIAN:** · Worker training/qualification (Level 1, Level 2, Level 3) ☐ Voltage < 50 v • General electrical safe work practices, grounding, use of GFCIs · Safe work practices during diagnostics/troubleshooting, maintenance, repair ☐ Voltage 50-600v · Safe design features for electrical equipment ☐ Voltage > 600v · Arc flash protection

☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and

devices, training workers, designate "authorized" personnel, notify "affected" personnel.

☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.9. UTILITY RELATED HAZARDS

□ AC
 □ DC
 □ 3-phase
 □ Battery and/or solar power
 □ Capacitor/transformer
 LOCKOUT/TAGOUT OF ELECTRICAL

IMPORTANT! This work may/will

include close proximity to electric

☑ Applicable

П

ENERGY

utility lines.

■ Not Applicable, Not Anticipated

DRAF EXPLA	-T NATORY NOTES, CLARIFICATIONS:		
\boxtimes	OVERHEAD, ABOVE-GROUND UTILITIES	☐ Maintain proper clearance, employ other appropri	riate precautions for the conditions.
	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance penetrations, and employ other utility clearance/☐ Hand digging or vacuum post-holing within 3' of u	ocator practices, as appropriate for conditions.
B.10.	CONFINED SPACE ENTRY, HAZA	ARDOUS ENCLOSED SPACES Applicat	le 🛮 Not Applicable, Not Anticipated
	ANATORY NOTES, CLARIFICATIONS:		
	CONFINED SPACE(S) Potential/actual hazards: Atmospheric hazards: Flammable/explosive	 Develop effective site-specific entry procedure pe Personnel to be trained/qualified. Hazards properly characterized Use equipment necessary for safe entry (for ac 	
	☐ Prantinable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ Other toxic ☐ Combustible dust	Develop measures for emergency rescue, as ap IMPORTANT: Describe site-specific safety measures about the same and the same	plicable.
	☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy		ed spaces thru control measures to prevent unauthorized
	HAZARDOUS ENCLOSED OR INDOOR SPACE(S) Indoors (occupied or vacant) Machine/equipment pit/vault Basement/crawl space Tunnel, shaft, gallery Trench, excavation Hazardous exhaust or emissions Building-related hazards	\square Conduct air monitoring, as appropriate for condit	ate. e duct or active exhaust ventilation. tilation to introduce fresh air/dissipate atmospheric hazards. ions and hazards (see Part C, "Air Monitoring"). led "Trenching/Excavation" in Section B.7. "Construction,
B.11.	STORAGE OF BULK MATERIAL	S 🛮 Applicable	☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:		
Storag	ge of equipment is anticipated. STORAGE OF BULK MATERIALS (for Storage of Hazardous Materials,	 ⊠ Store materials in stable manner (stacked, racked to prevent tipping, sliding, rolling, falling or collap ⊠ Do not exceed load limits of racks, platform, scaff 	
	See Section B.13.)	□ Ensure stored materials do not block aisles, passa	
	INFECTIOUS / ALLERGENIC BIO NATORY NOTES, CLARIFICATIONS:	DHAZARDS ☐ Applicable	
		1	
	☐ Wastewater, sewer☐ Bird Guano	□ Low hazard - use basic hygiene practices, protecti□ More severe hazard - add protective clothing, res	
	 ☐ Mold, fungi, Valley Fever ☐ Bloodborne pathogens ☐ Other (describe above) 	☐ For human pathogens use "Universal Precautions	
B.13.	COMMERCIAL CHEMICAL PROD	UCTS 🛛 Applicable	☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:		·
Antici	pated that a gasoline powered generato PRODUCTS REGULATED BY HAZARD		dily available within same work shift, containers labelled
	COMMUNICATION STANDARD	properly, workers trained/oriented on hazards For subcontractor use of chemical products, coor	

 $\hfill \square$ Secure cylinders upright, caps on when not in use, handle with care, prevent damage.

 $\hfill\square$ Ensure acetylene cylinders NOT secured to steel arc welding bench.

 $\hfill\Box$ "No smoking" signage at cylinder storage area for flammable gases.

□ Store/use in a manner to prevent asphyxiation hazard.□ Segregate oxygen and fuel gases by distance (20') or barrier.

 \square Control ignition sources.

 \square Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure.

nonflammable)

COMPRESSED GAS (flammable or

DRAF	T						
		☐ Use/stor	e in a manner to control inhalation exposure hazards, P	PE, air monitoring.			
	FLAMMABLE/COMBUSTIBLE	☐ Proper st	orage (flam. storage cabinets, other storage precaution	ns).			
_	LIQUIDS		er fuel safety can (metal fuel can preferred).				
			gnition sources.				
		☐ Groundir	ng and bonding where appropriate.				
	ACIDS, CAUSTICS, OTHER		vith care, use appropriate eye/face/skin protection.				
	CORROSIVES	☐ Eyewash	, deluge shower, drench hose, hand washing (with wate	er), as appropriate.			
	TOXIC		☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact,				
		skin abso	skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.				
\boxtimes	EMISSIONS FROM FUEL	□ Position outdoor personnel upwind of exhaust source.					
	COMBUSTION, INDUSTRIAL PROCESSES		vers, fans to provide fresh air to work area and dissipate	•			
	⊠ Gasoline		iratory protection for high levels of smoke, exhaust part				
	☐ Diesel	☐ Conduct	☐ Conduct air monitoring as appropriate (see Part C, "Air Monitoring").				
	☐ Propane/Natural Gas						
	☐ Welding/cutting/hot work						
	☐ Vehicle/equipment exhaust						
	☐ Other						
П	OTHER HAZARDS	□ Describe	other hazardous substances and safety measures unde	r "Explanatory Notes, Clarifications," above.			
Ц			-	,			
	CHEMICAL/HAZMAT STORAGE		storage cabinet, cage, storage room, or similar.				
	Check this when jobsite requirements include special		compatible chemicals are segregated.				
	provisions for chemical storage.		secondary containment.				
	j .		pecial safety equipment near chemical storage				
	ITE CONTAMINANTS, CHEMICAL	WASTES		☐ Not Applicable, Not Anticipated			
	NATORY NOTES, CLARIFICATIONS:						
	site COCs include chlorinated VOCs, 1,4-d		exavalent chromium.				
	ALL THAT APPLY. Provide explanatory r			1			
l l	/groundwater contaminants (historical r	elease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants			
	tent release, known high concentrations		☐ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H ₂ S)			
	mer chemical disposal site, landfill		☐ BTEX, petroleum derived VOCs	☐ Cyanides, hydrogen cyanide (HCN) ☐ Asbestos			
	oan fill, residual contaminants otainerized waste (drums, process equipr	mont)	☐ Fuel oils, petroleum, waste oil, lubricants ☐ Metals, metal compounds, metal dusts	☐ Lead paint			
I	ried drums (known or potential)	nent)	☐ Elemental mercury	☐ Lead paint☐ Pesticides, herbicides, fungicides			
	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers			
	ntaminated building surfaces		 ☑ Polychlorinated biphenyls (PCBs) 	☐ Radioactive contaminants			
	exploded ordnance		☐ Potential for flammable vapors	 ✓ Other (see Explanatory Notes, above) 			
	losive dust		☐ Potential for flammable gas (methane)				
		OPERATIONS	, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION	: JS at an "UNCONTROLLED HAZ, WASTE SITE"			
\boxtimes	(per HAZWOPER, 29 CFR 1910.120), in						
	 Implement site control plan 	via Exclusion	Zone(s), Contaminant Reduction Zone(s) and Support 2	Zone (aka EZ, CRZ, SZ)			
	:		azards per OSHA Hazard Communication Standard.				
		•	cations and other relevant site-specific information.				
	!		O-hour training, current 8-hour refresher, 3 days superv	vised field experience.			
	- Site supervisor(s) required t		,				
			 Medical Monitoring program, as applicable. orker protection via engineering controls, work practice 	es personal protective equipment (PPF) air			
			s, spill containment, emergency preparedness and response				
		•	ee Part C, "Air Monitoring, Worker Exposure Monitorin				
			sufficiently detail site-specific procedures for the above				
	FOR SITE WITH CHEMICAL CONTAMIN	IANTS OR WA	STE BUT NOT REGULATED BY HAZWOPER				
	 Workers to be knowledgeal 	ole/aware of o	chemical hazards thru safety training/orientation and av	ailability of hazard information			
	•		exposure through engineering controls, work practices,	PPE, as appropriate.			
			itor/evaluate worker exposure, as applicable.				
	OFF-SITE MIGRATION OF	1	ment controls to minimize hazard migration (dust suppr				
	CONTAMINANTS	☐ Comm	nunity/perimeter air monitoring to be conducted per pe	rimeter air monitoring plan.			
\boxtimes	SPILL CONTAINMENT, CONTAINERS	□ Descri	be above any site-specific procedures for spill containm	nent, container handling, as applicable			
	DADIATION HAZADDS (Other than	n Cunlinkt	□ Applicable	Mot Applicable Not Applicated			
D. 10.	RADIATION HAZARDS (Other than	n Sunigni)	☐ Applicable	☑ Not Applicable, Not Anticipated			

D	DIVAL I						
EXPLA	EXPLANATORY NOTES, CLARIFICATIONS:						
	IONIZING	Describe hazards &	k safety measure	s above in Explana	atory Notes, Clarification	ons.	
Ш	RADIATION	Conduct exposure	monitoring, as a	ppropriate (see Pa	rt C, "Air Monitoring, '	Worker Exposure Monitoring").	
	NON-IONIZING				atory Notes, Clarification		
Ш	RADIATION	Conduct exposure	monitoring, as a	ppropriate (see Pa	art C, "Air Monitoring, '	Worker Exposure Monitoring").	
B.16.	HAZMAT/DANGE	ROUS GOODS SI	HIPPING/TRAI	NSPORTATION	☐ Applicable	Not Appli	cable, Not Anticipated
MODE	(S) OF TRANSPORT:	☐ Road	☐ Rail	☐ Air	□ Sea	☐ Inland Waterway	□ International
IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.							
EXPLA	EXPLANATORY NOTES, CLARIFICATIONS:						

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments)							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
\boxtimes	AIR-TESTING PARAMETERS	 ✓ VOCs, GASES ✓ PID, Lamp energy: 10.6 eV ☐ FID ☐ Carbon monoxide ☐ Hydrogen sulfide ☐ Oxygen (O₂) 				☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each paran ☐ Other:	neter	
	ACTION LEVELS FOR O2/LEL	☐ Oxygen	□ Oxygen $\leq 19.5\%$ - ventilate to raise O_2 to acceptable levels, or use Level B. $\geq 23.0\%$ - ventilate to lower O_2 to acceptable levels, or use Level B and control fire hazards & ignition sources.					
	ACTION LEVELS FOR TOXICS				OR take action to reduce breathing			
	(sustained breathing zone	⊠ VOCs		< <u>5</u> ppr	m	5 ppm to 25 ppm: Level C (air purifying respirator)25 ppm: Level B (air-supplied respirator)		
	concentrations)	☐ Carbon Mo		< 35 ppm			m - Level B (air-supplied respirat	
		☐ Hydrogen S	Sulfide	< 10 ppm		· 	>10 ppm - Level B (air-supplied respirator)	
		☐ Total Dust		< m(g/m³	> mg/m³ - Level C (air-purifying respirator)		
		П						
7	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)							
C.2.	OTHER WORKER E	EXPOSURE N	ONITORING	⊠ A	Applicable			Not Applicable, Not Anticipated
□ Air	Sampling (sample colle	ection, passive (dosimeter)		☐ Ionizing o	r Non-ior	nizing Radiation Testing	
☐ Wij	pe/Bulk Sampling <i>(to e</i>	valuate worker	exposure)		☐ Noise Tes	ting		☐ Other
	NATORY NOTES, CLARI to be conducted in dire		he summer. Sta	ndard heat	t stress precau	ıtions sho	ould be taken.	

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPAI Supervisor, qualified	D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.				
	Printed Name	Signature	Date		
THA PREPARED BY:					
(minimum one person)					
THA	Printed Name	Signature	Date		
REVIEWED/ APPROVED BY:					
(minimum one person)					

D.2. FIELD CREW ACKNOWLEDGEMENTS				
CONTRACTOR'S FIELD CREW				
	and understand this THA, participated in project safety br		information herein. Date	
Printed Name Signature Employee No.				
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	IA was made available to you, and you had an opportunit	y to ask guestions about the information herein.		
Printed Name	Signature	Company Name	Date	

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION						
TASK:	Groundwater Moni	Groundwater Monitoring Well Installation				
Project Name:	Omega Superfund S	ite OU2				
Project Address:	Los Angeles County	os Angeles County, CA				
Description of Task & Worksite:	Oversight of installa	tion of groundwater monitoring	wells.			
A.2. EMERGENCY RE	SPONSE Based	on analysis of worksite factors,	client/regulatory requir	ements, availability c	of emergency services.	
Consider all Relevant Risk Factor EXPLANATORY NOTES, CLARIFIC		edures (fire/explosion, medical,	chemicals/spills, security	y, site factors, weath	er, communications).	
Available Means of Jobsite En Communication			☐ Land Line	☐ 2-Way Radio	☐ On-site alarm/signal system	
To Summon Emergency Police, Fire, Ar	mbulance	911, for external responders	☑ Other:			
Other Emergency Contacts, a (such as security, spill responde						
Suggested Nearest Emergency		Name: Presbyterian Intercommunity Hospital				
		12401 Washington Boulevard, Whittier, California 90602 : (562) 698-0811 ⊠ See Directions in HASP				
Suggested Non-Emergency Urg	+	Name: Urgent Care America, Inc	· ·			
Suggested Non-Emergency Org		: 13470 Telegraph Road, Whittier, CA 90605				
		: (562) 906-7766		e Directions in HASP		
Job-site Evacuation P	,	int will be determined by the co	ntractor carrying out the	e task.		
Rally Point, Place						
Special Er Equipment/Pr	mergency None ocedures					
IMPORTANT: After initial eme	ergency response act	ions and incident stabilization, o	contact appropriate pro	ject personnel (to be	e listed in Part A.1 by contractor)	
A.3. SUMMARY OF WO	ORK STEPS, H	AZARDS, CONTROLS	Based on PART B, "HA	AZARD ANALYSIS," a	nd worksite/client/project factors.	
Summary/outline of work steps/hazards/controls, with references to applicable Sections in Parts B and C, as applicable:						
WORK STEPS		HAZARDS		CONTROLS		
Well Installation		Being struck by heavy machin pinch points; being exposed to fluid or investigation-derived aboveground or underground slipping/tripping/falling; heat insects, spiders, and ticks; heat to hazardous chemicals (e.g., and sample preservatives).	o leaking equipment waste; striking utilities; stress; exposure to avy lifting, and exposure			

ואאום	•	DNALL					
A.4. H	A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.						
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:						
	ROUTINE PPE Standard work clothes appropriate for task Work gloves appropriate for task						
\boxtimes		☐ Hard-toed boots/shoes					
		⊠ Hardhat		:	y/reflective vest		
		□ Safety glasses			(boot attachments)		
		ļ	v-hazard chemical		loves, Tyvek suit, dust mask, boot covers).		
	ROUTINE H&S	☑ First Aid Kit			creen, shade canopy, other)		
\boxtimes	EQUIPMENT/GEAR			☑ Project-supplied drin	king water and/or hygiene facilities		
				☐ Poison ivy skin wash	(Technu or similar)		
			oray, other)	,	t (flares, lights, reflective device)		
		□ Caution tape □		☐ Traffic control warning devices (cones, or similar)			
		☐ Other:					
	NON-ROUTINE	☐ Goggles and/or face shield	☐ Disposable n-	-95 dust mask	☐ Fire retardant clothing		
ш	PERSONAL PROTECTIVE	☐ Chemical protective gloves	☐ Half-face res	oirator (APR), cartridges	☐ Arc Flash Protection		
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)	☐ Full-face resp	oirator (APR), cartridges	☐ Electrical-Hazard-rated boots, gloves		
	(Indicate specific types of PPE in	☐ Outer boots, boot covers	☐ Personal flot	ation device	☐ Personal fall apparatus		
	Explanatory Notes, Clarifications)	☐ Other:					
П	SPECIAL HAZARD CONTROLS	☐ Portable GFCI	☐ Lockout/tago	out equipment	☐ Ventilation equipment (fan, blower)		
ш		☐ Eyewash - 15 min. flow	☐ Emergency d	eluge shower	☐ Air horn, alarm		
		☐ Other:					
\boxtimes	DECON,	☑ Receptacle for disposable PPE	⋈ Hand washin	g provisions	□ Decon solution, related supplies		
	PPE DISPOSAL	☐ Other:					
	AIR MONITORING EQUIPMENT, O	:					
	EQUIPMENT FOR WORKER EXPOS	URE TESTING					

B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.					
Explai	natory Notes, Clarifications:				
☑ Gen ☑ Wea ☑ Plan ☑ Wor ☑ Illun	Seneral Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☐ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ☐ Weather/climate-related hazards – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ☐ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ☐ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). ☐ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate. ☐ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs.				
		e site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.			
I HanI EyeI FootI Hear	d protection - Wear protective work glo protection - Wear safety glasses (with si protection, rough terrain - Wear work ring protection – use earplugs, earmuffs	Wear hardhat or "bump cap" as appropriate for hazard. Wes appropriate for the hazard and work tasks. de shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection. boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions. Gor both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA. Totection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.			
☐ Mar ☐ Kniv tool ☑ <i>Wor</i>	ual hand tools - proper tool for the job, es, cutting tools - Utility/folding/collaps s with automatically-retracting blades, o	the site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire." ible knives and fixed open-bladed knives/cutting tools are <u>not</u> permitted, unless specifically authorized. Cutting or with enclosed/guarded blades are permitted. nachinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection). t/machinery – See Section B.5.			
Secur	ty- Delineate site-specific HS aspects,	as appropriate, in "Explanatory Notes, Clarifications," above. res for personal security (such as buddy system, security service, work scheduling, other measures)			
⊠ Rounno t □ Unfa	tine work travel - Use routine safe/defe exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> p Distance or During Sleep Hours – Mini	-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. nsive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, her/road conditions, adequate sleep, other measures as appropriate). e driving (assemble maps, enter destination in GPS). mize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ehicle operational controls and handling characteristics before operating vehicle.			
		· · · · · · · · · · · · · · · · ·			
	PECIAL DRIVING/TRAFFIC/TRAN IATORY NOTES, CLARIFICATIONS:	SPORTATION HAZARDS Applicable			
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	 □ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. □ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. □ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. 			
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment. □ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. □ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. □ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.				
⊠	WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	 ☑ Wear reflective vests where exposed to traffic hazards. ☑ Where possible, park vehicles as protective shield from oncoming traffic. ☑ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☑ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☑ Use DOT-trained flaggers or police detail where appropriate or required. 			
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	 □ Coordinate with rail company and implement required safety and security measures. □ Site workers to receive safety training for railroad work. 			

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	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."				
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.				
	TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	☑ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"				
B.3. \	NATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated				
EXPLA	NATORY NOTES, CLARIFICATIONS:					
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation WORK NEAR WATER HAZARDS OR	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. 				
	ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards." 				
B.4. I	ALL HAZARDS Applicable	e Not Applicable, Not Anticipated				
EXPLA	NATORY NOTES, CLARIFICATIONS:					
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Ensure safe access to elevated work location □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net				
	LADDERS / STAIRS ☐ Extension/straight ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs Hazards: Falls, overhead hazards	 □ Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more. 				
	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	 ☐ Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use. 				
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use. 				
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"				

B.5. I	POWERED TOOLS, EQUIPMENT, I	MACHINERY Applie	able	□ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	 Use tool in accordance w Ensure guards are in plac Use PPE or other safety p Provide training or verify Stay clear of hazard zone For spark/heat generatin Use vise/clamp/work ber Use respirators, ventilatio See fuel-safety practices in 	fe operating condition before each use. th manufacturer's specifications. e and no hazardous equipment modificatiractices, as appropriate, for eye/hearing/hoperator competency for use of power to "line of fire," when working near where potool, control fire hazards, segregate cometh or other appropriate means to hold/seen, wet methods, other appropriate means in Section B.13., "Commercial Chemical Prosection B.8., "Electrical Hazards".	nand/head/body protection. ol. bower tools are used. bustible/flammable materials. cure the work piece. to control inhalation hazard.
	OPERATION OF EQUIPMENT/MACHINERY □ Point-of-operation hazards ☑ Pinch points, moving parts ☑ 'Struck-by,' 'caught between' □ Hot surfaces, heat □ Extension cords, flexible wire ☑ Fuel related (gas or liquid) □ Hydraulic pressure □ Pneumatic pressure □ Kinetic, stored energy ☑ Noise ☑ Emissions, discharge gases □ Working at heights, falls ☑ Lifting, repetitive motion □ Illumination □ Electrical	Arrange worksite for safe Use equipment/machine Ensure point-of-operation devices; do not override Secure long hair/loose cla Heed warning signs/label Implement lockout/tagou Use safe lifting practices for Implement safe work practices for climbing/fall hazards a For climbing/fall hazards, see Operate fuel-powered equ Use safe practices for fuel	ssociated with large equipment, see Secti Section B.8., "Electrical Hazards." sipment in well ventilated location. s, see Section B.13., "Commercial Chemica	ing parts. struck by" and "caught between" hazards. s. it thems (pneumatic/hydraulic), stored energy. on B.4., "Fall Hazards."
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY	·	ardous-energy practices (lockout/tagout), lesignate "authorized" personnel, notify "	
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	 Fire hazard controls (water Protect nearby personne For gas welding/cutting, under the paraget of the paraget For arc welding, follow election See Section B.13., "Comm 	o be implemented. ted (eye protection, clothing, apron, etc.). cher, fire extinguisher, water, isolate comb from hazardous UV, IR light (shielding, cu se gas cylinder safe practices (secured, up cylinders to metal bench used for arc we ctrical safe work practices. See Section B.8 ercial Chemical Products," for hazards of v	oustibles). Irtain). right, caps on when not in use, prevent Iding). B., "Electrical Hazards." velding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed air is used f☐ Use eye protection.☐ Ensure air tank, hoses, fitt	d body; do not use compressed air for clea or cleaning, restrict pressure to 30 psi or b ings are in good repair using factory fitting	pelow, equip nozzle with chip guard. gs.
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accordance with m Keep generator and work Never use indoors, or nea Provide for ventilation ar Use hearing protection in Use power cords/extensi Use ground-fault circuit in See Section B.8., "Electric 	area dry. If building air intake vents due to carbon r If d/or air monitoring where hazardous accu- close proximity to operating generator, a pricords specified by instructions. Interrupters (GFCIs) in accordance with ma al Hazards." If die fore refueling. See safe practices for flam	monoxide hazard. umulation of exhaust emissions is possible. s needed.

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: П Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** ☑ Applicable ☐ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** This section applies to single pass mud rotary drilling, sonic drilling, and hollow-stem auger. Always verify that drill rig has sufficient clearance from utility lines before beginning work. DRILLING ☑ Follow safe work practices, as applicable: X Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max, safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. **IMPORTANT!** This work may/will ☑ Follow safe work practices per Section B.9., "Utility Related Hazards" X include close proximity to overhead electric utility lines. ■ Not Applicable, Not Anticipated B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT Applicable EXPLANATORY NOTES, CLARIFICATIONS: **HEAVY EQUIPMENT** ⊠ Follow general safe work practices for heavy equipment: \boxtimes Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over. • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. · Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. · Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: Hazards: · Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. - injury from falling load · Crane operator will remain at the controls at all times during operation. - crane tipping over due to Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers Keep area beneath suspended loads clear of personnel. - injury from mechanical hazards

		Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 ☑ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
\boxtimes	FORKLIFT	☐ In addition to general safety practices for heavy equipment (above), as applicable:
	Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 □ Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard. Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	☑ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
\boxtimes	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
	•	plicable ☐ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 □ Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v	 ☐ Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 2, Level 3) General electrical safe work practices, grounding, use of GFCIs Safe work practices during diagnostics/troubleshooting, maintenance, repair Safe design features for electrical equipment Arc flash protection
	☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/transformer	
	☐ Battery and/or solar power	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.

B.9. I	UTILITY RELATED HAZARDS 🗵	I Applicable		☐ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
\boxtimes	OVERHEAD, ABOVE-GROUND UTILITIES	☑ Maintain proper clearance, emplo	y other appropriate precautions	for the conditions.
	UNDERGROUND UTILITIES	☑ Confirm appropriate underground penetrations, and employ other u☑ Hand digging or vacuum post-holi	tility clearance/locator practices,	as appropriate for conditions.
B.10.	CONFINED SPACE ENTRY, HAZA	ARDOUS ENCLOSED SPACES	□ Applicable	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	CONFINED SPACE(S)	☐ Develop effective site-specific ent	ry procedure <u>per applicable requ</u>	latory requirements:
	Potential/actual hazards:	Personnel to be trained/qualific	ed.	
	☐ Atmospheric hazards:	Hazards properly characterized		F oir magnituding contilation)
	☐ Flammable/explosive☐ Oxygen deficiency	 Use equipment necessary for sa Develop measures for emergen 	afe entry (for access, retrieval, PP	E, air monitoring, ventilation)
	☐ Hydrogen sulfide	IMPORTANT:	су гозово, аз аррпсавіс.	
	☐ Other toxic		ty measures above in Explanatory	
	☐ Combustible dust	 Modify this THA or attach 	separate confined space safety p	olan/permit, as appropriate
	□ Electrical	☐ Protect non-entry personnel work	ing near confined spaces thru co	ntrol measures to prevent unauthorized
	☐ Mechanical, engulfment, entrapment, stored energy	entry (such as safety orientation,	=	The of model of to provent undution 200
	entrapment, stored energy			
	HAZARDOUS ENCLOSED OR	☐ Use personal protective clothing t		l, biological hazards.
	INDOOR SPACE(S)	☐ Use respiratory protection, if necendary Duct equipment exhaust to outdo		vhaust vontilation
	☐ Indoors (occupied or vacant) ☐ Machine/equipment pit/vault			uce fresh air/dissipate atmospheric hazards.
	☐ Basement/crawl space	☐ Conduct air monitoring, as approp		
	☐ Tunnel, shaft, gallery			xcavation" in Section B.7. "Construction,
	☐ Trench, excavation	Heavy Equipment, Lift Equipmen		anaga antru raquiramenta (ahaya)
	☐ Hazardous exhaust or emissions☐ Building-related hazards	☐ If space classified/regulated as a "	confined space, Tollow confined	space entry requirements (above).
R 11	STORAGE OF BULK MATERIALS	S Applicable		☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	Z rippindable		in the Applicable, Not Althoughted
Storag	e of equipment, soil cuttings and decon			
\boxtimes	STORAGE OF BULK MATERIALS			cked, tied, wrapped, or otherwise secured)
	(for Storage of Hazardous Materials,	to prevent tipping, sliding, rolling ☑ Do not exceed load limits of racks		are stable robust secure
	See Section B.13.)		•	are stubie, robust, secure.
	INFECTIOUS / ALLERGENIC BIO	HAZARDS	·	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	☐ Wastewater, sewer	☐ Low hazard - use basic hygiene pr	actices, protective gloves, provide	e for hand washing.
	☐ Bird Guano	☐ More severe hazard - add protect		
	☐ Mold, fungi, Valley Fever	☐ For human pathogens use "Unive	rsal Precautions" per Bloodborne	Pathogen Program.
	\square Bloodborne pathogens			
	☐ Other (describe above)			
B.13.	COMMERCIAL CHEMICAL PROD	UCTS 🛛 Applicable		☐ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	PRODUCTS REGULATED BY HAZARD			in same work shift, containers labelled
	COMMUNICATION STANDARD	properly, workers trained/oriente		who a sefective as a stire as
		☐ For subcontractor use of chemical☐ Conduct air monitoring, as appropriate the conduct of th		
	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on		
Ш	nonflammable)	☐ Propane cylinders not in use must		
		☐ Ensure acetylene cylinders NOT se	=	
		☐ Store/use in a manner to prevent	=	
		☐ Segregate oxygen and fuel gases b		

DRAF	T					
		 □ Control ignition sources. □ "No smoking" signage at cylinder storage area for flammable gases. □ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring. 				
	LIQUIDS	□ Proper storage (flam. storage cabinets, other storage precautions). □ Use proper fuel safety can (metal fuel can preferred). □ Control ignition sources. □ Grounding and bonding where appropriate.				
			ith care, use appropriate eye/face/skin protection. deluge shower, drench hose, hand washing (with wate	r), as appropriate.		
	TOXIC		substances, use/store in a manner to control exposure prption); use PPE as appropriate, conduct air monitoring			
	COMBUSTION, INDUSTRIAL PROCESSES	 ☑ Position outdoor personnel upwind of exhaust source. ☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot. ☑ Conduct air monitoring as appropriate (see Part C, "Air Monitoring"). 				
	OTHER HAZARDS	□ Describe	other hazardous substances and safety measures unde	r "Explanatory Notes, Clarifications," above.		
	Check this when jobsite requirements include special	☐ Chemical storage cabinet, cage, storage room, or similar. ☐ Ensure incompatible chemicals are segregated. ☐ Provide secondary containment. ☐ Locate special safety equipment near chemical storage				
B.14.	SITE CONTAMINANTS, CHEMICAL	WASTES	☑ Applicable	☐ Not Applicable, Not Anticipated		
	NATORY NOTES, CLARIFICATIONS: ite COCs include chlorinated VOCs, 1,4-dio	vano and h	ovavalent chromium			
	ALL THAT APPLY. Provide explanatory no		exavalent dironnum.			
	/groundwater contaminants (historical rele		☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants		
	ent release, known high concentrations	,		☐ Sulfides, hydrogen sulfide (H ₂ S)		
☐ For	mer chemical disposal site, landfill		⋈ BTEX, petroleum derived VOCs	☐ Cyanides, hydrogen cyanide (HCN)		
	an fill, residual contaminants		\square Fuel oils, petroleum, waste oil, lubricants	☐ Asbestos		
	ntainerized waste (drums, process equipme	ent)	✓ Metals, metal compounds, metal dusts	☐ Lead paint		
	ied drums (known or potential)		☐ Elemental mercury	☑ Pesticides, herbicides, fungicides☐ Sensitizers		
	ge containers, potential for spills ntaminated building surfaces		☐ Polyaromatic hydrocarbons (PAHs) ☑ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants		
	exploded ordnance		☐ Potential for flammable vapors	✓ Other (see Explanatory Notes, above)		
	losive dust		☐ Potential for flammable gas (methane)			
	FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ. WASTE SITE" (per HAZWOPER, 29 CFR 1910.120), implement the following as applicable to the work: - Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ) - Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard. - Include site map/figure depicting work locations and other relevant site-specific information. - Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience. - Site supervisor(s) required to have 8-hr. Supervisor training. - Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable. - Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response. - Conduct air monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring"). IMPORTANT: Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work. FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER - Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate. - Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable.					
	OFF-SITE MIGRATION OF CONTAMINANTS	☐ Impler	ment controls to minimize hazard migration (dust suppr	•		
		AMINANTS CONTAINMENT. CONTAINERS CONTAINMENT. CONTAINERS Describe above any site-specific procedures for spill containment, container handling, as applicable				

B.15.	8.15. RADIATION HAZARDS (Other than Sunlight)							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
	IONIZING RADIATION Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").							
	NON-IONIZING RADIATION		Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").					
B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION ☐ Applicable ☐ Not Applicable, Not Anticipated								
B.16.	HAZMAT/DANGE	ROUS GOODS S	HIPPING/TRAI	NSPORTATION	☐ Applicable		Not Applic	cable, Not Anticipated
	HAZMAT/DANGER (S) OF TRANSPORT:	ROUS GOODS S	HIPPING/TRAI	NSPORTATION ☐ Air	☐ Applicable ☐ Sea	☐ Inland Wate		cable, Not Anticipated ☐ International
MODE	(S) OF TRANSPORT: RTANT: Ensure that each	☐ Road h individual who wi	☐ Rail	☐ Air shipping/transport	□ Sea	☐ Inland Wate	rway th required trair	☐ International ning (awareness, function-

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☒ Not Applicable, Not Anticipated							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
	AIR-TESTING PARAMETERS	□ VOCs, GASI □ PID, L □ FID □ Carbon mo □ Hydrogen s □ Oxygen (O₂	amp energy: <u>9.</u> noxide ulfide	<u>8</u> eV		□ Flammable gas (LEL) □ Particulate (dust) □ Calibration kit for each param □ Other:	neter	
	ACTION LEVELS FOR O2/LEL	☐ Oxygen		late to raise O ₂ to accept			e hazards & ignition sources	
	OZ/LLL	 ≥23.0% - ventilate to lower O₂ to acceptable levels, or use Level B and control fire hazards & ignition □ LEL □ Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <1 					*	
	ACTION LEVELS FOR TOXICS	Parameters		Level D, Modified D*	1	rels C or B*, as indicated below, C	OR take action to reduce breathing for Level D*.	
	(sustained breathing zone	□ VOCs		< <u>5</u> ppm	<u>5</u>	ppm to <u>50</u> ppm: Level C (air p ppm: Level B (air-supplied respi	urifying respirator)	
	concentrations)	☐ Carbon Mo		< 35 ppm	≥35 ppm - Level B (air-supplied respirator)			
		☐ Hydrogen S	Sulfide	< 10 ppm	. į	10 ppm - Level B (air-supplied respirator)		
		☐ Total Dust		< mg/m³	> <u></u> m	g/m ³ - Level C (air-purifying respi	rator)	
9	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)							
C.2.	OTHER WORKER E	EXPOSURE N	ONITORING	☑ Applicable			Not Applicable, Not Anticipated	
□ Air	Sampling (sample colle	ection, passive	dosimeter)	☐ Ionizing o	r Non-ior	nizing Radiation Testing		
☐ Wij	pe/Bulk Sampling <i>(to e</i>	valuate worker	exposure)	☐ Noise Tes	ting		☐ Other	
	EXPLANATORY NOTES, CLARIFICATIONS: Work to be conducted in direct sunlight in the summer. Standard heat stress precautions should be taken.							

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.				
THA	Printed Name	Signature	Date	
PREPARED BY:				
(minimum one person)				
THA	Printed Name	Signature	Date	
REVIEWED/ APPROVED BY:				
(minimum one person)				

D.2. FIELD CREW ACKNOWLEDGEN	MENTS		
CONTRACTOR'S FIELD CREW			
	and understand this THA, participated in project safety by		
Printed Name	Signature	Employee No.	Date
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	HA was made available to you, and you had an opportunit	y to ask questions about the information herein.	
Printed Name	Signature	Company Name	Date

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION							
TASK:	Groundwater Monitoring Well Development						
Project Name:	Omega Superfund Sit	Omega Superfund Site OU2					
Project Address:	Los Angeles County,	CA					
Description of Task & Worksite:	Description of Task & Oversight of development of groundwater monitoring wells anddevelopment logging.						
A.2. EMERGENCY RE	SPONSE Based	on analysis of worksite factors, client/	regulatory require	ements, availability o	of emergency services.		
Consider all Relevant Risk Factor EXPLANATORY NOTES, CLARIFI		dures (fire/explosion, medical, chemic	als/spills, security	, site factors, weathe	r, communications).		
Available Means of Jobsite Er Communication			Land Line	☐ 2-Way Radio	☐ On-site alarm/signal system		
To Summon Emergency Police, Fire, Ar	mbulance	111, for external responders ⊠ O	ther:				
Other Emergency Contacts, a (such as security, spill responde							
Suggested Nearest Emergency		ospital Name: Presbyterian Intercommunity Hospital					
		:: 12401 Washington Boulevard, Whittier, California 90602 f: (562) 698-0811 ⊠ See Directions in HASP					
Suggested Non-Emergency Urg		ame: Urgent Care America, Inc.	□ 366	e Directions in HASE			
Suggested Non-Emergency Org		13470 Telegraph Road, Whittier, CA	90605				
		(562) 906-7766		e Directions in HASP			
Job-site Evacuation P	, , , , ,	nt will be determined by the contracto	or carrying out the	task.			
Rally Point, Place	of refuge:						
Special Er							
Equipment/Pr							
		ons and incident stabilization, contac			-		
A.3. SUMMARY OF WO	ORK STEPS, HA	AZARDS, CONTROLS Based	d on PART B, "HA	ZARD ANALYSIS," a	nd worksite/client/project factors.		
Summary/outline of work steps	/hazards/controls, wi	th references to applicable Sections	n Parts B and C, a	s applicable:			
WORK STEPS		HAZARDS		CONTROLS			
Well Development		Being struck by heavy machinery; be pinch points; being exposed to leaking fluid or investigation-derived waste; aboveground or underground utilities slipping/tripping/falling; heat stress; insects, spiders, and ticks; heavy lifting; and exposure to hazardous chesite-related chemicals and sample pinch points; being struck to the site-related chemicals.	ng equipment striking ss; exposure to ng; pressurized emicals (e.g.,	See Below			

ואאום	DNAI I							
A.4. H	A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
	ROUTINE PPE Standard work clothes appropriate for task Standard work clothes appropriate for task							
\boxtimes	ROOTINETTE	□ Standard Work clothes appropria □ Hard-toed boots/shoes	ite for task					
		□ Hard-toed boots/shoes □ Hardhat		1	01			
		1 —						
		⊠ Safety glasses			(boot attachments)			
			v-hazard chemical		oves, Tyvek suit, dust mask, boot covers).			
\boxtimes	ROUTINE H&S	□ First Aid Kit		Sun protection (sunsetting)	creen, shade canopy, other)			
	EQUIPMENT/GEAR	□ Fire extinguisher		☑ Project-supplied drink	king water and/or hygiene facilities			
				☐ Poison ivy skin wash (Technu or similar)			
			oray, other)		Vehicle emergency kit (flares, lights, reflective device)			
		□ Caution tape □			□ Traffic control warning devices (cones, or similar)			
		☐ Other:			Y			
	NON-ROUTINE	☐ Goggles and/or face shield	☐ Disposable n-	-95 dust mask	☐ Fire retardant clothing			
	PERSONAL PROTECTIVE	☐ Chemical protective gloves	☐ Half-face resp	pirator (APR), cartridges	☐ Arc Flash Protection			
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)	☐ Full-face resp	irator (APR), cartridges	☐ Electrical-Hazard-rated boots, gloves			
	(Indicate specific types of PPE in	☐ Outer boots, boot covers	☐ Personal flot		☐ Personal fall apparatus			
	Explanatory Notes, Clarifications)	☐ Other:	-\$					
	SPECIAL HAZARD CONTROLS	☐ Portable GFCI	☐ Lockout/tago	ut equipment	☐ Ventilation equipment (fan, blower)			
		☐ Eyewash - 15 min. flow	☐ Emergency d	eluge shower	☐ Air horn, alarm			
		☐ Other:						
	DECON,	☐ Receptacle for disposable PPE	☐ Hand washin	g provisions	□ Decon solution, related supplies			
	PPE DISPOSAL	□ Other:						
П	AIR MONITORING EQUIPMENT, O	:						
	EQUIPMENT FOR WORKER EXPOS	URE TESTING						

D 1 D	OUTINE HAZADD DDEDADEDNIE	C. This section required for all tasks						
	B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.							
Expla	natory Notes, Clarifications:							
☑ Ger☑ Wes☑ Plan☑ Wos	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☐ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ☐ Weather/climate-related hazards – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ☐ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ☐ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).							
	☑ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate. ☑ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs.							
		e site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
		e site-specific its aspects, as appropriate, iii Explanatory Notes, Clarifications, above. /ear hardhat or "bump cap" as appropriate for hazard.						
☑ Han	d protection - Wear protective work glo	ves appropriate for the hazard and work tasks.						
⊠ Eye	protection - Wear safety glasses (with si	de shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection.						
☑ Foo	t protection, rough terrain - Wear work	boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.						
☑ Hear	ring protection – use earplugs, earmuffs	(or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA.						
□ Dus	t, <mark>unsanitary conditions</mark> – For general pr	otection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.						
Tools	, Equipment, Machinery – Delinea	te site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
		maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire."						
☐ Kniv	res, cutting tools - Utility/folding/collaps	ible knives and fixed open-bladed knives/cutting tools are <u>not</u> permitted, unless specifically authorized. Cutting						
	, ,	or with enclosed/guarded blades are permitted.						
	· · · · · · · · · · · · · · · · · ·	nachinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection).						
	ration/use of powered tools/equipmen	-						
	•	as appropriate, in "Explanatory Notes, Clarifications," above.						
•	• • •	res for personal security (such as buddy system, security service, work scheduling, other measures)						
	king alone - Establish "check in" proced							
Routi	<u>ne Driving Hazards</u> – Delineate site	-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
■ Routine work travel - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use,								
no	exting, clear windows, account for weat	her/road conditions, adequate sleep, other measures as appropriate).						
no f	exting, clear windows, account for weat a <mark>miliar location</mark> - Plan travel route <u>befor</u>	her/road conditions, adequate sleep, other measures as appropriate). <u>e driving</u> (assemble maps, enter destination in GPS).						
no f ☑ Unf □ Lon	exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> g Distance or During Sleep Hours – Mini	her/road conditions, adequate sleep, other measures as appropriate). <u>e driving</u> (assemble maps, enter destination in GPS). mize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield.						
no f ☑ Unf □ Lon	exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> g Distance or During Sleep Hours – Mini	her/road conditions, adequate sleep, other measures as appropriate). <u>e driving</u> (assemble maps, enter destination in GPS).						
no f ☑ Unf ☐ Lon ☑ Unf	exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> g Distance or During Sleep Hours – Mini amiliar vehicle – Become familiar with v	her/road conditions, adequate sleep, other measures as appropriate). <u>e driving</u> (assemble maps, enter destination in GPS). mize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ehicle operational controls and handling characteristics <u>before</u> operating vehicle.						
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	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.
	TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	☑ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"
B.3. \	NATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation WORK NEAR WATER HAZARDS OR	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate.
	ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards."
B.4. I	ALL HAZARDS Applicable	e Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Ensure safe access to elevated work location □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net
	LADDERS / STAIRS ☐ Extension/straight ladders ☐ Step ladders ☐ Fixed ladders ☐ Stairs Hazards: Falls, overhead hazards	 □ Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.
	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	 ☐ Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use.
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.5. I	POWERED TOOLS, EQUIPMENT, I	MACHINERY 🛛	Applicable	☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:			
Pumps	and pressurized lines will be used for ha			
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	Use tool in accord Ensure guards ard Use PPE or other Provide training of Stay clear of haza For spark/heat go Use vise/clamp/v Use respirators, vo	ensure safe operating condition dance with manufacturer's space in place and no hazardous ensafety practices, as appropriator verify operator competency and zone, "line of fire," when venerating tool, control fire hazwork bench or other appropria	ecifications. quipment modifications. te, for eye/hearing/hand/head/body protection. for use of power tool. vorking near where power tools are used. ards, segregate combustible/flammable materials. te means to hold/secure the work piece. appropriate means to control inhalation hazard. nercial Chemical Products."
	OPERATION OF EQUIPMENT/MACHINERY ☐ Point-of-operation hazards ☒ Pinch points, moving parts ☒ 'Struck-by,' 'caught between' ☐ Hot surfaces, heat ☐ Extension cords, flexible wire ☒ Fuel related (gas or liquid) ☒ Hydraulic pressure ☐ Pneumatic pressure ☐ Kinetic, stored energy ☒ Noise ☒ Emissions, discharge gases ☐ Working at heights, falls ☒ Lifting, repetitive motion ☐ Illumination ☐ Electrical	Arrange worksite Use equipment/r Ensure point-of-odevices; do not of secure long hair/ Heed warning sig Implement lockoo Use safe lifting praice implement safe word implement safe	operation, mechanical power to poverride interlocks, guards, pro- loose clothing/hanging jewelr pros/labels, keep safe distance; ut/tagout for repairs/adjustma actices for movement of heavy pork practices for compressed pazards associated with large eards, see Section B.8., "Electric ered equipment in well ventilates for fuels, see Section B.13., "(Amachinery. Imanufacturer's use and safety instructions. Iransmission, other moving parts are guarded with protective objective devices. In a moving/rotating parts. It avoid locations of "struck by" and "caught between" hazards. It portable equipment It air, pressurized systems (pneumatic/hydraulic), stored energy. It quipment, see Section B.4., "Fall Hazards." It al Hazards." It devices the moving parts are guarded with protective objective of the protection of the protection. It is a supplied to the protection of the protectio
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY	·	·	es (lockout/tagout), provide lockout/tagout locks and "personnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	General safe work Hot work permit Operator properl Fire hazard contr Protect nearby pe For gas welding/cu Damage; never se For arc welding, fo See Section B.13.,	spractices: system to be implemented. ly protected (eye protection, cols (watcher, fire extinguisher ersonnel from hazardous UV, utting, use gas cylinder safe precure gas cylinders to metal be collow electrical safe work practice.	lothing, apron, etc.). , water, isolate combustibles). R light (shielding, curtain). actices (secured, upright, caps on when not in use, prevent ench used for arc welding). tices. See Section B.8., "Electrical Hazards." cts," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed air☐ Use eye protection☐ Ensure air tank, ho	is used for cleaning, restrict pon. n. oses, fittings are in good repai	
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accordance Keep generator a Never use indoor Provide for ventile Use hearing prote Use power cords Use ground-fault See Section B.8. 	e with manufacturer's instruction work area dry. To, or near building air intake valation and/or air monitoring wection in close proximity to op/extension cords specified by circuit interrupters (GFCIs) in "Electrical Hazards." ment before refueling. See sa	ents due to carbon monoxide hazard. here hazardous accumulation of exhaust emissions is possible. erating generator, as needed.

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: П Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** ☑ Applicable ☐ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** Rig will be used for well development. DRILLING ☑ Follow safe work practices, as applicable: \boxtimes Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill riq to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. **IMPORTANT!** This work may/will ☑ Follow safe work practices per Section B.9., "Utility Related Hazards" X include close proximity to overhead electric utility lines. ☐ Not Applicable, Not Anticipated B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT Applicable **EXPLANATORY NOTES, CLARIFICATIONS:** Forklift may be required to move investigation-derived waste containers to the proper staging area. **HEAVY EQUIPMENT** ⊠ Follow general safe work practices for heavy equipment: \boxtimes Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over, Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. · Operators required to use seatbelts. • Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. · Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: Hazards: Only qualified persons operate cranes (certificate required). electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. injury from falling load Crane operator will remain at the controls at all times during operation. - crane tipping over due to · Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, · Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers Keep area beneath suspended loads clear of personnel. - injury from mechanical hazards Rigging procedures – see Mechanical Lifting, Rigging, below.

DRAF	т	
×	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 ☑ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 ☑ In addition to general safety practices for heavy equipment (above), as applicable: Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard. Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
\boxtimes	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	⊠ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
×	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
B.8. E	LECTRICAL HAZARDS 🗆 Ap	plicable ✓ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 □ Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v AC DC 3-phase Battery and/or solar power Capacitor/transformer	 ☐ Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 2, Level 3) General electrical safe work practices, grounding, use of GFCIs Safe work practices during diagnostics/troubleshooting, maintenance, repair Safe design features for electrical equipment Arc flash protection
	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.
	IMPORTANT! This work may/will include close proximity to electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

☐ Not Applicable, Not Anticipated

DRAF EXPLA	T NATORY NOTES, CLARIFICATIONS:		
	OVERHEAD, ABOVE-GROUND UTILITIES	☐ Maintain proper clearance, employ other appropriate precaut	ions for the conditions.
	UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures penetrations, and employ other utility clearance/locator pract ☐ Hand digging or vacuum post-holing within 3' of utility location	ices, as appropriate for conditions.
	CONFINED SPACE ENTRY, HAZA	ARDOUS ENCLOSED SPACES	☑ Not Applicable, Not Anticipated
EXPLA	ANATORY NOTES, CLARIFICATIONS:		
	CONFINED SPACE(S) Potential/actual hazards: Atmospheric hazards: Flammable/explosive Oxygen deficiency Hydrogen sulfide	 Develop effective site-specific entry procedure per applicable Personnel to be trained/qualified. Hazards properly characterized Use equipment necessary for safe entry (for access, retrieval Develop measures for emergency rescue, as applicable. IMPORTANT: 	
	☐ Other toxic ☐ Combustible dust ☐ Electrical	 Describe site-specific safety measures above in Explan Modify this THA or attach separate confined space saf 	
	☐ Mechanical, engulfment, entrapment, stored energy	☐ Protect <u>non-entry personnel working near confined spaces</u> thr entry (such as safety orientation, labeling, delineation, barrier	
	HAZARDOUS ENCLOSED OR INDOOR SPACE(S) Indoors (occupied or vacant) Machine/equipment pit/vault Basement/crawl space Tunnel, shaft, gallery Trench, excavation Hazardous exhaust or emissions Building-related hazards	☐ Use personal protective clothing to protect from chemical, phy☐ Use respiratory protection, if necessary/appropriate. ☐ Duct equipment exhaust to outdoors using passive duct or act☐ Use fans, blowers or other effective means of ventilation to in☐ Conduct air monitoring, as appropriate for conditions and haze☐ For a trench/excavation, also see subsection entitled "Trenchin Heavy Equipment, Lift Equipment." ☐ If space classified/regulated as a "confined space," follow confi	ive exhaust ventilation. troduce fresh air/dissipate atmospheric hazards. ards (see Part C, "Air Monitoring"). ng/Excavation" in Section B.7. "Construction,
B.11.	STORAGE OF BULK MATERIALS	S	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:		
Storag	e of equipment, development water, an	· · · · · · · · · · · · · · · · · · ·	
\boxtimes	STORAGE OF BULK MATERIALS (for Storage of Hazardous Materials,	 ⊠ Store materials in stable manner (stacked, racked, blocked, int to prevent tipping, sliding, rolling, falling or collapse. ⊠ Do not exceed load limits of racks, platform, scaffold; ensure remaining the province of the	
	See Section B.13.)		, , , , , , , , , , , , , , , , , , , ,
B.12.	INFECTIOUS / ALLERGENIC BIO	HAZARDS	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:		
	☐ Wastewater, sewer☐ Bird Guano	☐ Low hazard - use basic hygiene practices, protective gloves, pr☐ More severe hazard - add protective clothing, respirator/dust	mask, decon, as appropriate.
	☐ Mold, fungi, Valley Fever☐ Bloodborne pathogens☐ Other (describe above)	☐ For human pathogens use "Universal Precautions" per Bloodb	orne Patnogen Program.
B.13.	COMMERCIAL CHEMICAL PROD	UCTS 🛮 Applicable	☐ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:		
	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	 □ Safety Data Sheets available, either on site or readily available properly, workers trained/oriented on hazards □ For subcontractor use of chemical products, coordinate/discustrate conduct air monitoring, as appropriate (see Part C, "Air Monit 	ss during safety meetings.

 $\hfill \square$ Secure cylinders upright, caps on when not in use, handle with care, prevent damage.

 $\hfill\square$ Ensure acetylene cylinders NOT secured to steel arc welding bench.

□ Store/use in a manner to prevent asphyxiation hazard.□ Segregate oxygen and fuel gases by distance (20') or barrier.

☐ Control ignition sources.

 \square Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure.

COMPRESSED GAS (flammable or

nonflammable)

DRAF	Т			
		☐ "No smol	king" signage at cylinder storage area for flammable gas	ses.
		☐ Use/store	e in a manner to control inhalation exposure hazards, Pl	PE, air monitoring.
	FLAMMABLE/COMBUSTIBLE	☐ Proper st	orage (flam. storage cabinets, other storage precaution	s).
	LIQUIDS		er fuel safety can (metal fuel can preferred).	
		`	gnition sources.	
			ng and bonding where appropriate.	
	ACIDS, CAUSTICS, OTHER		vith care, use appropriate eye/face/skin protection.	
	CORROSIVES		, deluge shower, drench hose, hand washing (with wate	
	TOXIC		substances, use/store in a manner to control exposure	=
	51 410010110 FD 01 4 FLIFI		orption); use PPE as appropriate, conduct air monitoring	j as appropriate.
\boxtimes	EMISSIONS FROM FUEL COMBUSTION, INDUSTRIAL		outdoor personnel upwind of exhaust source.	atus contravia la cucuda
	PROCESSES		vers, fans to provide fresh air to work area and dissipate	•
	☐ Gasoline		iratory protection for high levels of smoke, exhaust part air monitoring as appropriate (see Part C, "Air Monitori	
	☐ Diesel	_ conduct	an monitoring as appropriate (see Fact 6, Air Monitori	ng <i>)</i> .
	☐ Propane/Natural Gas			
	☐ Welding/cutting/hot work			
	∇ehicle/equipment exhaust			
	☐ Other			
	OTHER HAZARDS	☐ Describe	other hazardous substances and safety measures under	r "Explanatory Notes, Clarifications," above.
	CHEMICAL/HAZMAT STORAGE		storage cabinet, cage, storage room, or similar.	
	Check this when jobsite		compatible chemicals are segregated.	
	requirements include special provisions for chemical storage.		econdary containment.	
			pecial safety equipment near chemical storage	
	SITE CONTAMINANTS, CHEMICA	L WASTES		☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:		and the state of t	
	ite COCs include chlorinated VOCs, 1,4-di		exavalent chromium.	
	ALL THAT APPLY. Provide explanatory n			I -
	/groundwater contaminants (historical re	elease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants
	ent release, known high concentrations		☐ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H ₂ S)
	mer chemical disposal site, landfill an fill, residual contaminants		⊠ BTEX, petroleum derived VOCs □ Fuel oils, petroleum, waste oil, lubricants	☐ Cyanides, hydrogen cyanide (HCN)☐ Asbestos
	atrini, residual contaminants Itainerized waste (drums, process equipm	nent)	✓ Metals, metal compounds, metal dusts	☐ Lead paint
	ied drums (known or potential)	iontj	☐ Elemental mercury	☑ Pesticides, herbicides, fungicides
	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers
	itaminated building surfaces		□ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants
	exploded ordnance		☐ Potential for flammable vapors	□ Other (see Explanatory Notes, above)
□ Ехр	losive dust		☐ Potential for flammable gas (methane)	
X	FOR WORK CONSISTING OF CLEANUP	OPERATIONS	, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION	S at an "UNCONTROLLED HAZ. WASTE SITE"
	(per HAZWOPER, 29 CFR 1910.120), im			
	•		Zone(s), Contaminant Reduction Zone(s) and Support Z	one (aka EZ, CRZ, SZ)
			azards per OSHA Hazard Communication Standard. cations and other relevant site-specific information.	
		_	0-hour training, current 8-hour refresher, 3 days superv	ised field experience
	 Site supervisor(s) required to 			· · · · · · · · · · · · · · · · · · ·
	•		Medical Monitoring program, as applicable.	
			orker protection via engineering controls, work practice	
	=		s, spill containment, emergency preparedness and respo	
	ū		see Part C, "Air Monitoring, Worker Exposure Monitoring sufficiently detail site-specific procedures for the above	•
]			STE BUT NOT REGULATED BY HAZWOPER	e elements, as appropriate for the work.
			ste BOT NOT REGULATED BY HAZWOPER chemical hazards thru safety training/orientation and av	railability of hazard information
	-		exposure through engineering controls, work practices, l	
	•		itor/evaluate worker exposure, as applicable.	· · · · · · · · · · · · · · · · · · ·
	OFF-SITE MIGRATION OF		ment controls to minimize hazard migration (dust suppr	ession, covers, foam, etc.)
	CONTAMINANTS		nunity/perimeter air monitoring to be conducted per per	
\boxtimes	SPILL CONTAINMENT, CONTAINERS	□ Descri	be above any site-specific procedures for spill containm	ent, container handling, as applicable.
	DADIATION HAZADDO (OIL. III			
R. 15.	RADIATION HAZARDS (Other thar	Sunlight)	☐ Applicable	☑ Not Applicable, Not Anticipated

D							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:						
	IONIZING	Describe hazards 8	& safety measure	s above in Explana	atory Notes, Clarification	ons.	
Ш	RADIATION	Conduct exposure	monitoring, as a	ppropriate (see Pa	irt C, "Air Monitoring,"	Worker Exposure Monitoring").	
	NON-IONIZING				atory Notes, Clarification		
	RADIATION	Conduct exposure	monitoring, as a	ppropriate (see Pa	irt C, "Air Monitoring,"	Worker Exposure Monitoring").	
B.16.	HAZMAT/DANGE	ROUS GOODS SI	HIPPING/TRAI	NSPORTATION	☐ Applicable	Not Appli	cable, Not Anticipated
MODE	(S) OF TRANSPORT:	☐ Road	□ Rail	☐ Air	□ Sea	☐ Inland Waterway	□ International
IMPOF	RTANT: Ensure that each	ch individual who wi	II be involved in s	shipping/transporta	ation of hazardous mat	terial is current with required trai	ning (awareness, function-
specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.							
EXPLANATORY NOTES, CLARIFICATIONS:							

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C. I.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☐ Not Applicable, Not Anticipated								
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:								
	AIR-TESTING PARAMETERS	□ VOCs, GASES □ PID, Lamp energy: 9.8 eV □ FID □ Carbon monoxide □ Hydrogen sulfide □ Oxygen (O₂)					☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each parameter ☐ Other:		
	ACTION LEVELS FOR O2/LEL		≤19.5% - venti				els, or use Level B.	e hazards & ignition sources	
	02/111	 ≥23.0% - ventilate to lower O₂ to acceptable levels, or use Level B and control fire hazards & ignition sources. □ LEL □ Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At >10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10%. 					······································		
	ACTION LEVELS FOR TOXICS	Parameters	<u> </u>	Level D,	Modified D*		Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.		
	(sustained breathing zone	□ VOCs		< <u>5</u> pp	ım				
	concentrations)	☐ Carbon Mo		< 35 ppm 235 ppm - Level B (air-supplied respirator)					
		☐ Hydrogen S	Sulfide				10 ppm - Level B (air-supplied respirator)		
		☐ Total Dust		< m	ng/m³	> mg/m³ - Level C (air-purifying respirator)			
		П							
*	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)								
C.2.	OTHER WORKER E	XPOSURE N	MONITORING	$\boxtimes A$	Applicable			Not Applicable, Not Anticipated	
	Sampling (sample colle		,				nizing Radiation Testing		
	pe/Bulk Sampling <i>(to e</i>		exposure)		☐ Noise Test	ting		☐ Other	
	NATORY NOTES, CLARI to be conducted in dire		he summer. Sta	ındard hea	nt stress precau	itions sho	ould be taken.		

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPAR Supervisor, qualified	RATION, REVIEW/APPROVAL SIGNATURES - THA typicall /knowledgeable designee, with support of HS personnel as deeme	y prepared by project staff, reviewed/approved by Projed appropriate by the Project Manager.	ect Manager,
	Printed Name	Signature	Date
THA			
PREPARED BY:			
(minimum one person)			
THA	Printed Name	Signature	Date
REVIEWED/			
APPROVED BY:			
(minimum one person)			

D.2. FIELD CREW ACKNOWLEDGEN	MENTS		
CONTRACTOR'S FIELD CREW			
	and understand this THA, participated in project safety by		
Printed Name	Signature	Employee No.	Date
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	HA was made available to you, and you had an opportunit	y to ask questions about the information herein.	
Printed Name	Signature	Company Name	Date

PART A - SITE SAFETY PLAN

A.1.	A.1. PROJECT/TASK INFORMATION									
	TASK:	Engineer	Engineering Survey							
	Project Name:	Omega S	Omega Superfund Site OU2							
	Project Address:	Los Ange	les County	/ /						
Des	scription of Task &			ontractor and use of GPS tool.						
	Worksite:	010.000	u. voj subsc							
A.2.	EMERGENCY RE	SPONS	E Based o	on analysis of worksite factors,	client/regu	ılatory requi	irements, availability	of emergency services.		
	Consider all Relevant Risk Factors & Response Procedures (fire/explosion, medical, chemicals/spills, security, site factors, weather, communications). EXPLANATORY NOTES, CLARIFICATIONS:									
Avail	able Means of Jobsite Er				☐ Lan	d Line	☐ 2-Way Radio	☐ On-site alarm/signal system		
	Communication		☐ Other:							
	To Summon Emergency Police, Fire, Ai		⊠ DIAL 9	11, for external responders	Other	:				
Othe	er Emergency Contacts, a									
(such	as security, spill responde	er, utility):								
Sugge	ested Nearest Emergency			Name: Presbyterian Intercomm						
		Services		12401 Washington Boulevard, (562) 698-0811	vvnittier, c		See Directions in HASI	D		
Sugge	sted Non-Emergency Ur	gent Care		ame: Urgent Care America, Inc.		1 2 0	Jee Birections in thick			
		-		13470 Telegraph Road, Whittie	er, CA 9060	·				
				(562) 906-7766 It will be determined by the co	atrootor oo		See Directions in HASI	D		
	Job-site Evacuation P Rally Point, Place	,	кану рон	it will be determined by the col	ili actor cai	ir yirig out ti	ne task.			
	•	mergency	None							
	Equipment/Pr									
IMPO	RTANT: After initial eme	ergency resp	oonse actio	ons and incident stabilization, o	ontact app	propriate pr	oject personnel (to b	pe listed in Part A.1 by contractor)		
A.3. S	SUMMARY OF WO	ORK ST	EPS, HA	ZARDS, CONTROLS	Based on	PART B, "H	IAZARD ANALYSIS,"	and worksite/client/project factors.		
Summa	ry/outline of work steps	s/hazards/c	ontrols, wi	th references to applicable Sec	ctions in Pa	erts B and C	, as applicable:			
WORK	(STEPS			HAZARDS		CONTROLS				
Oversee	e survey subcontractor			slipping/tripping/falling; heat stress; exposure to insects, spiders, and ticks; powered equipment			See below			
Contrac	tor survey by GPS			slipping/tripping/falling; heat stress; working alone; exposure to insects, spiders, and ticks; powered equipment		See below				
A.4. H	1&S EQUIPMENT	LIST List	worksite eq	uipment for worker protection;	provide de	tails in Expla	anatory Notes, Clarific	ations.		
EXPLAN	ATORY NOTES, CLARIFICA	ATIONS:								
\boxtimes	ROUTINE PPE		Standar	rd work clothes appropriate for	task	×	Work gloves appropr	riate for task		
				ed boots/shoes			Noise/hearing protect			
							High-visibility/reflect Ice creepers (boot at			
			ļ	ź	rd chemical	<u>+</u>		vek suit, dust mask, boot covers).		
	ROUTINE H&S		☐ Busic 11		_ 001111001		tection (sunscreen, s			
\boxtimes	EQUIPMENT/GEAR		⊠ Fire ext			□ Project-	supplied drinking wat	er and/or hygiene facilities		
				ency eyewash bottle(s)			vy skin wash (Technu			
				control (repellant, wasp spray, of	ther)			lights, reflective device)		
			☐ Caution	ı tape		⊠ Traffic c	control warning device	es (cones, or similar)		
			☐ Other:							

DRAF	MAFT						
	NON-ROUTINE	☐ Goggles and/or face shield	☐ Disposable n-95 dust mask	☐ Fire retardant clothing			
│ └ │	PERSONAL PROTECTIVE	☐ Chemical protective gloves	☐ Half-face respirator (APR), cartridges	☐ Arc Flash Protection			
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)	☐ Full-face respirator (APR), cartridges	☐ Electrical-Hazard-rated boots, gloves			
	(Indicate specific types of PPE in	☐ Outer boots, boot covers	☐ Personal flotation device	☐ Personal fall apparatus			
	Explanatory Notes, Clarifications)	□ Other:					
П	SPECIAL HAZARD CONTROLS	☐ Portable GFCI	☐ Lockout/tagout equipment	☐ Ventilation equipment (fan, blower)			
		☐ Eyewash - 15 min. flow	☐ Emergency deluge shower	☐ Air horn, alarm			
		☐ Other:					
	DECON,	☐ Receptacle for disposable PPE	☐ Hand washing provisions	☐ Decon solution, related supplies			
□	PPE DISPOSAL	☐ Other:					
	AIR MONITORING EQUIPMENT, O EQUIPMENT FOR WORKER EXPOS		evices to be brought to worksite; Use in acco	ordance with procedures in Part C:			
	<u> </u>	<u> </u>	<u> </u>	·			

B.1. R	OUTINE HAZARD PREPAREDNES	SS This section required for all tasks.					
	Explanatory Notes, Clarifications:						
	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ Gen☑ Wea☑ Plan☑ Won☐ Illur	 General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ✓ Weather/climate-related hazards - heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ✓ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ✓ Worksite traffic hazards - Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). ☐ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate. ✓ Lifting, manual material handling - use proper lifting procedures, seek help for >50 lbs. 						
		e site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.					
☑ Han☑ Eye☑ Foo☐ Hea☐ Dus	d protection - Wear protective work glo protection - Wear safety glasses (with s t protection, rough terrain - Wear work ring protection – use earplugs, earmuff t, unsanitary conditions – For general p	Vear hardhat or "bump cap" as appropriate for hazard. Ives appropriate for the hazard and work tasks. Ide shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection. Iboots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions. Is (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA. In rotection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed. In a steel site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.					
		maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire."					
tool □ <i>Wol</i>	s with automatically-retracting blades, of	sible knives and fixed open-bladed knives/cutting tools are <u>not</u> permitted, unless specifically authorized. Cutting or with enclosed/guarded blades are permitted. nachinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection). nt/machinery – See Section B.5.					
Secur	<u>ity</u> – Delineate site-specific HS aspects,	as appropriate, in "Explanatory Notes, Clarifications," above.					
-	n crime, urban – Use appropriate measu rking alone - Establish "check in" proced	res for personal security (such as buddy system, security service, work scheduling, other measures)					
	-	e-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.					
⊠ Rou no t ⊠ Unfa	tine work travel - Use routine safe/defe exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> g Distance or During Sleep Hours – Mini	insive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, ther/road conditions, adequate sleep, other measures as appropriate). The driving (assemble maps, enter destination in GPS). The driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, therefore, the driving destination is appropriate).					
	SPECIAL DRIVING/TRAFFIC/TRAN	ISPORTATION HAZARDS ☐ Not Applicable, Not Anticipated					
EXPLAI	NATORY NOTES, CLARIFICATIONS:						
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	☐ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. ☐ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. ☐ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience.					
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	 □ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. □ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. □ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure. 					
	WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	 ☑ Wear reflective vests where exposed to traffic hazards. ☑ Where possible, park vehicles as protective shield from oncoming traffic. ☑ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☑ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☑ Use DOT-trained flaggers or police detail where appropriate or required. 					
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work.					

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	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.
	TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	☑ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"
B.3. \	WATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate.
	WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards."
B.4. I	FALL HAZARDS 🔲 Applicable	e Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	Constal full protection requirement thresholds, required @ . 41 (industrial . 41 (construction) . 101 (conffolds)
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Use tether or positioning device □ Ensure safe access to elevated work location □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net
	LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.
	SCAFFOLD Supported scaffold Suspended scaffold Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use.
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.5. F	POWERED TOOLS, EQUIPMENT, I	MACHINERY	□ Applicable	☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:		and Ausid monatitive lifting of this	
	or's total station and/or handheld GPS u POWERED HAND TOOLS	nit are battery-po ☐ For all power	·	equipment.
	☐ Battery-operated		tools: s to ensure safe operating condition b	pefore each use.
	☐ Electric-powered, 120v/240v	 Use tool in a 	ccordance with manufacturer's speci	ifications.
	☐ Fuel-powered		ds are in place and no hazardous equ	
	☐ Pneumatic		other safety practices, as appropriate, ning or verify operator competency fo	, for eye/hearing/hand/head/body protection.
	☐ Powder-actuated			rking near where power tools are used.
				ds, segregate combustible/flammable materials.
	Hazards: Eye/hand/body injury, fuel- related hazards, Inhalation hazards,		= =	means to hold/secure the work piece.
	noise, sparks, heat, fire hazard,	□ Use respirato	rs, ventilation, wet methods, other a	ppropriate means to control inhalation hazard.
	electrical hazards		ty practices in Section B.13., "Comme	
		☐ For electrical	hazards, see Section B.8., "Electrical	Hazards".
\boxtimes	OPERATION OF	□ General safet	ry requirements for equipment, mach	ninery:
	EQUIPMENT/MACHINERY		ksite for safe access to equipment/m	-
	☐ Point-of-operation hazards	 Use equipme 	ent/machinery in accordance with ma	anufacturer's use and safety instructions.
	☐ Pinch points, moving parts			nsmission, other moving parts are guarded with protective
	☐ 'Struck-by,' 'caught between'		not override interlocks, guards, prote	
	☐ Hot surfaces, heat		hair/loose clothing/hanging jewelry r og signs/labels, keen safe distance: av	real moving/rotating parts. I rotations of "struck by" and "caught between" hazards.
	☐ Extension cords, flexible wire		ockout/tagout for repairs/adjustmen	
	☐ Fuel related (gas or liquid)	·	ng practices for movement of heavy p	5 5
	☐ Hydraulic pressure☐ Pneumatic pressure	☐ Implement sa	afe work practices for compressed air	r, pressurized systems (pneumatic/hydraulic), stored energy.
	☐ Kinetic, stored energy	\square For climbing/	fall hazards associated with large equ	uipment, see Section B.4., "Fall Hazards."
	☐ Noise		hazards, see Section B.8., "Electrical	Hazards."
	☐ Emissions, discharge gases	☐ Operate fuel-	powered equipment in well ventilate	ed location.
	☐ Working at heights, falls	☐ Use safe prac	tices for fuels, see Section B.13., "Co	mmercial Chemical Products."
	□ Lifting, repetitive motion			
	☐ Illumination			
	⊠ Electrical			
	LOCKOUT/TAGOUT OF HAZARDOUS		·	(lockout/tagout), provide lockout/tagout locks and
	ENERGY WELL WORK		<u> </u>	personnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC)	☐ General safe	•	
	UV/IR light-eye/skin burns, hot-work		rmit system to be implemented. operly protected (eye protection, clo	thing aprop etc)
	hazards, toxic welding fumes,		controls (watcher, fire extinguisher, w	
	compressed gases, electrical shock		by personnel from hazardous UV, IR	
		☐ For gas weldi	ng/cutting, use gas cylinder safe prac	ctices (secured, upright, caps on when not in use, prevent
			er secure gas cylinders to metal bend	9.
			-	es. See Section B.8., "Electrical Hazards."
				s," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR		nozzle toward body; do not use comp	· ·
	(for compressed gases, see Section B.13., "Compressed Gases")	☐ Use eye prote		ssure to 30 psi or below, equip nozzle with chip guard.
	Section B. 13., Compressed Gases)	, ,	nk, hoses, fittings are in good repair u	using factory fittings.
П	PORTABLE GENERATOR			quipment/Machinery (above), and as follows:
ш	Hazards: Electrical shock, carbon		dance with manufacturer's instructio	ns.
	monoxide in exhaust, fuel-related		tor and work area dry.	
	fire, injury from mechanical hazards,		doors, or near building air intake ven	
	lifting		protection in close proximity to oper	ere hazardous accumulation of exhaust emissions is possible.
			ords/extension cords specified by ins	
				cordance with manufacturer's instructions.
			B.8., "Electrical Hazards."	
			quipment before refueling. See safe I Chemical Products."	practices for flammable/combustible liquids in Section B.13.,
		Commercia	a onomical i roudots.	

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: П Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in • For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** □ Applicable ☑ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** This section applies to single pass mud rotary drilling, sonic drilling, and hollow-stem auger. Always verify that drill rig has sufficient clearance from utility lines before beginning work. DRILLING ☐ Follow safe work practices, as applicable: П Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. IMPORTANT! This work may/will ☐ Follow safe work practices per Section B.9., "Utility Related Hazards" include close proximity to overhead electric utility lines. B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT □ Applicable **EXPLANATORY NOTES, CLARIFICATIONS:** HEAVY EQUIPMENT ☐ Follow general safe work practices for heavy equipment: Hazards: Struck-by, run-over, caught Trained/qualified persons operate all heavy equipment. between (pinch points), roll over, • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards · No passengers on moving/operating equipment except where passenger seat/restraint is present. · Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. · Leaks or defective safety equipment should be repaired before use. · Operators required to use seatbelts. Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. · Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: П Hazards: • Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. injury from falling load • Crane operator will remain at the controls at all times during operation. - crane tipping over due to · Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers

Keep area beneath suspended loads clear of personnel.

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	- injury from mechanical hazards	Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 ☐ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 ☐ In addition to general safety practices for heavy equipment (above), as applicable: Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard. Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
	PUBLIC AT RISK, SITE SECURITY	 □ During site operations protect public (overhead protection, barriers, warning signs). □ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. □ Lock/secure hazardous materials and/or equipment.
		plicable
	NATORY NOTES, CLARIFICATIONS: or's total station and/or handheld GPS of	unit are hattery-nowered
⊠	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 ✓ Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v AC DC 3-phase Battery and/or solar power Capacitor/transformer	Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 2, Level 3) General electrical safe work practices, grounding, use of GFCIs Safe work practices during diagnostics/troubleshooting, maintenance, repair Safe design features for electrical equipment Arc flash protection
	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.
П	IMPORTANT! This work may/will	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

include close proximity to electric utility lines.

B.9.	UTILITY RELATED HAZARDS] Applicable		
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	OVERHEAD, ABOVE-GROUND UTILITIES	☐ Maintain proper clearance, emplo	by other appropriate precautions	for the conditions.
	UNDERGROUND UTILITIES	☐ Confirm appropriate underground penetrations, and employ other u ☐ Hand digging or vacuum post-holi	tility clearance/locator practices,	as appropriate for conditions.
B.10.	CONFINED SPACE ENTRY, HAZA	ARDOUS ENCLOSED SPACES	☐ Applicable	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	CONFINED SPACE(S)	☐ Develop effective site-specific ent	ry procedure per applicable regu	llatory requirements:
	Potential/actual hazards:	Personnel to be trained/qualifi		
	☐ Atmospheric hazards:	Hazards properly characterized		E air manitaring vantilation)
	☐ Flammable/explosive☐ Oxygen deficiency	 Use equipment necessary for significant for significant for emerger 	afe entry (for access, retrieval, PP	E, air monitoring, ventilation)
	☐ Hydrogen sulfide	IMPORTANT:	icy reseac, as applicable.	
	☐ Other toxic	 Describe site-specific safe 	ty measures above in Explanatory	
	☐ Combustible dust	 Modify this THA or attach 	separate confined space safety p	plan/permit, as appropriate
	□ Electrical		.i.,	
	☐ Mechanical, engulfment,	entry (such as safety orientation,	-	ntrol measures to prevent unauthorized
	entrapment, stored energy	entry (such as safety offentation,	labeling, delineation, barriers)	
	HAZARDOUS ENCLOSED OR	☐ Use personal protective clothing t	o protect from chemical, physical	I, biological hazards.
	INDOOR SPACE(S)	☐ Use respiratory protection, if necessity		
	☐ Indoors (occupied or vacant)	☐ Duct equipment exhaust to outdo		
	☐ Machine/equipment pit/vault			uce fresh air/dissipate atmospheric hazards.
	☐ Basement/crawl space	☐ Conduct air monitoring, as approp		(see Part C, "Air Monitoring"). xcavation" in Section B.7. "Construction,
	☐ Tunnel, shaft, gallery ☐ Trench, excavation	Heavy Equipment, Lift Equipmen		xcavation in Section 6.7. Construction,
	☐ Hazardous exhaust or emissions	☐ If space classified/regulated as a '		space entry requirements (above).
	☐ Building-related hazards		·	
B.11.	STORAGE OF BULK MATERIALS	S		☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	STORAGE OF BULK MATERIALS			cked, tied, wrapped, or otherwise secured)
_		to prevent tipping, sliding, rolling		
	(for Storage of Hazardous Materials, See Section B.13.)	□ Do not exceed load limits of racks□ Ensure stored materials do not bl	•	are stable, robust, secure.
D 12	INFECTIOUS / ALLERGENIC BIO	•	ock aisies, passageways.	Mot Applicable Not Applicated
	NATORY NOTES, CLARIFICATIONS:	падакиз ш аррисаше		■ Not Applicable, Not Anticipated
L/ti L/ti				
	☐ Wastewater, sewer	☐ Low hazard - use basic hygiene pr		
	☐ Bird Guano	☐ More severe hazard - add protect	· .	
	☐ Mold, fungi, Valley Fever	☐ For human pathogens use "Unive	isai Precautions pei bioodborne	Patriogen Program.
	☐ Bloodborne pathogens			
	☐ Other (describe above)			
	COMMERCIAL CHEMICAL PROD	UCTS Applicable		■ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:			
	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	☐ Safety Data Sheets available, either properly, workers trained/oriente		nin same work shift, containers labelled
		☐ For subcontractor use of chemica		ring safety meetings.
		☐ Conduct air monitoring, as approp		= = = = = = = = = = = = = = = = = = = =
	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on		
	nonflammable)	☐ Propane cylinders not in use mus	be stored outdoors in cage or sir	milar secure enclosure.
		☐ Ensure acetylene cylinders NOT se	=	ı.
		\square Store/use in a manner to prevent	· -	
		\square Segregate oxygen and fuel gases I	by distance (20') or barrier.	

DRAF	T					
		☐ Control i	gnition sources.			
	:		king" signage at cylinder storage area for flammable gas			
			e in a manner to control inhalation exposure hazards, P			
		-	orage (flam. storage cabinets, other storage precaution	is).		
			er fuel safety can (metal fuel can preferred).			
	i i		gnition sources. Ig and bonding where appropriate.			
_			rith care, use appropriate eye/face/skin protection.			
Ш	0000000000		deluge shower, drench hose, hand washing (with water	er), as appropriate.		
П			substances, use/store in a manner to control exposure			
		skin abso	orption); use PPE as appropriate, conduct air monitoring	g as appropriate.		
		☐ Position (outdoor personnel upwind of exhaust source.			
	DDOCECCEC		ers, fans to provide fresh air to work area and dissipate	-		
	□ Casalina		ratory protection for high levels of smoke, exhaust part			
	□ Diesel	□ Conduct	air monitoring as appropriate (see Part C, "Air Monitori	ng").		
	☐ Propane/Natural Gas					
	☐ Welding/cutting/hot work					
	☐ Vehicle/equipment exhaust					
	☐ Other					
	OTHER HAZARDS	☐ Describe	other hazardous substances and safety measures unde	r "Explanatory Notes, Clarifications," above.		
П	CHEMICAL/HAZMAT STORAGE	☐ Chemical storage cabinet, cage, storage room, or similar.				
		☐ Ensure in	compatible chemicals are segregated.			
	requirements include special	☐ Provide s	econdary containment.			
	provisions for chemical storage.	☐ Locate sp	ecial safety equipment near chemical storage			
14. S	ITE CONTAMINANTS, CHEMICAL W	/ASTES	☑ Applicable	□ Not Applicable, Not Anticipated		
	NATORY NOTES, CLARIFICATIONS:					
	ite COCs include chlorinated VOCs, 1,4-dio		exavalent chromium.			
	ALL THAT APPLY. Provide explanatory no		C Occurred deficiency			
	/groundwater contaminants (historical releases known high consentrations	ease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants		
	ent release, known high concentrations mer chemical disposal site, landfill		☑ Chlorinated volatile organic compounds (VOCs)☑ BTEX, petroleum derived VOCs	☐ Sulfides, hydrogen sulfide (H ₂ S) ☐ Cyanides, hydrogen cyanide (HCN)		
	an fill, residual contaminants		☐ Fuel oils, petroleum, waste oil, lubricants	☐ Asbestos		
	ntainerized waste (drums, process equipme	ent)		☐ Lead paint		
☐ Bur	ied drums (known or potential)	•	☐ Elemental mercury	□ Pesticides, herbicides, fungicides		
☐ Lar	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers		
☐ Cor	ntaminated building surfaces		□ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants		
	exploded ordnance		☐ Potential for flammable vapors	□ Other (see Explanatory Notes, above)		
<u>.</u>	losive dust		☐ Potential for flammable gas (methane)			
\boxtimes	for Work Consisting of Cleanup of (per HAZWOPER, 29 CFR 1910.120), imp		, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION following as applicable to the work:	IS at an "UNCONTROLLED HAZ. WASTE SITE"		
			Zone(s), Contaminant Reduction Zone(s) and Support Z	one (aka EZ, CRZ, SZ)		
	1		azards per OSHA Hazard Communication Standard.	, ,		
			cations and other relevant site-specific information.			
			O-hour training, current 8-hour refresher, 3 days superv	rised field experience.		
	- Site supervisor(s) required to					
	· ·		Medical Monitoring program, as applicable.	os nersonal protective equipment (PPF) air		
	 Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response. 					
			ee Part C, "Air Monitoring, Worker Exposure Monitorin			
			sufficiently detail site-specific procedures for the above	e elements, as appropriate for the work.		
			STE BUT NOT REGULATED BY HAZWOPER			
	-		hemical hazards thru safety training/orientation and av			
	•		exposure through engineering controls, work practices, itor/evaluate worker exposure, as applicable.	ггь, аз арргорнате.		
	OFF-SITE MIGRATION OF		ment controls to minimize hazard migration (dust suppr	ression, covers, foam, etc.)		
Ш	CONTAMINANTS	:	unity/perimeter air monitoring to be conducted per pe			
	SPILL CONTAINMENT, CONTAINERS	_	be above any site-specific procedures for spill containm			

B.15.	RADIATION HAZA	ARDS (Other than	Sunlight) [☐ Applicable			☑ Not Appli	cable, Not Anticipated
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
	IONIZING RADIATION Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").							
	NON-IONIZING RADIATION		Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").					
B.16.	HAZMAT/DANGEI	ROUS GOODS S	HIPPING/TRAI	NSPORTATION	☐ Applicable		Not Applie	cable, Not Anticipated
MODE	(S) OF TRANSPORT:	☐ Road	□ Rail	☐ Air	□ Sea	☐ Inland Wate	erway	☐ International
IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.								
EXPLA	EXPLANATORY NOTES, CLARIFICATIONS:							

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	AIR MONITORING	(Direct-Read	ling Instrume	nts) 🗆 Applicable			Not Applicable, Not Anticipated
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:						
	AIR-TESTING PARAMETERS	□ VOCs, GASF □ PID, L □ FID □ Carbon mo □ Hydrogen s □ Oxygen (O₂	amp energy: <u>10</u> noxide ulfide	<u>0.6</u> eV		☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each param ☐ Other:	neter
	ACTION LEVELS FOR O2/LEL	☐ Oxygen		late to raise O_2 to accept			e hazards & ignition sources
O2/LEL ≥23.0% - ventilate to lower O₂ to acceptable levels, or use Level B and control fire hazards & □ LEL Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduc					······································		
	ACTION LEVELS FOR TOXICS	Parameters		Level D, Modified D*	:	els C or B*, as indicated below, C vel to concentration acceptable	OR take action to reduce breathing for Level D*.
	(sustained breathing zone	⊠ VOCs		< <u>5</u> ppm	<u>5</u>		
	concentrations)	☐ Carbon Monoxide		< 35 ppm	 	m - Level B (air-supplied respirat	
		☐ Hydrogen S	Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)		
		☐ Total Dust		< mg/m ³	> <u></u> m	g/m ³ - Level C (air-purifying respi	rator)
7	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)						
C.2.	OTHER WORKER E	EXPOSURE N	ONITORING	☑ Applicable			Not Applicable, Not Anticipated
□ Air	Sampling (sample colle	ection, passive	dosimeter)	☐ Ionizing o	Non-ior	nizing Radiation Testing	
☐ Wi	pe/Bulk Sampling <i>(to e</i>	valuate worker	exposure)	☐ Noise Test	ting		☐ Other
	NATORY NOTES, CLARI to be conducted in dire		he summer. Sta	ndard heat stress precau	itions sho	ould be taken.	

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.					
	Printed Name	Signature	Date		
THA PREPARED BY:					
(minimum one person)					
THA	Printed Name	Signature	Date		
REVIEWED/ APPROVED BY:					
(minimum one person)					

D.2. FIELD CREW ACKNOWLEDGEMENTS					
CONTRACTOR'S FIELD CREW					
	and understand this THA, participated in project safety br				
Printed Name	Signature	Employee No.	Date		
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	IA was made available to you, and you had an opportunit	y to ask guestions about the information herein.			
Printed Name	Signature	Company Name	Date		

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK	INFORM	IATION				
TASK:	Groundwater Well Monitoring					
Project Name:	Omega Su	Omega Superfund Site OU2				
Project Address:	Los Angele	os Angeles County, CA				
Description of Task & Worksite:	Oversee su	ubcontracto	or measuring depth to ground	water and collecting gro	undwater samples from monitoring we	ells.
A.2. EMERGENCY RE	SPONS	E Based o	on analysis of worksite factors	, client/regulatory requi	ements, availability of emergency serv	rices.
Consider all Relevant Risk Factor EXPLANATORY NOTES, CLARIFI		onse Proced	dures (fire/explosion, medical,	chemicals/spills, securit	ı, site factors, weather, communicatio	ns).
Available Means of Jobsite En Communication	/Alerting	∨erbal □ Other:		☐ Land Line	☐ 2-Way Radio ☐ On-site alar	m/signal system
To Summon Emergency Police, Fire, Ai		⊠ DIAL 9	11, for external responders	Other:		
Other Emergency Contacts, a (such as security, spill responde						
Suggested Nearest Emergency	y Medical		Name: Presbyterian Intercomr			
	Services		12401 Washington Boulevard			
					e Directions in HASP	
Suggested Non-Emergency Ur	gent Care		facility Name: Urgent Care America, Inc.			
			Address: 13470 Telegraph Road, Whittier, CA 90605 Phone #: (562) 906-7766 ⊠ See Directions in HASP			
Job-site Evacuation P Rally Point, Place		капу роп	y point will be determined by the contractor carrying out the task.			
Special Er Equipment/Pr	mergency ocedures	None				
IMPORTANT: After	initial emer	gency resp	onse actions and incident sta	bilization, contact appro	priate project personnel listed in Par	t A.1.
A.3. SUMMARY OF WO	ORK STI	EPS, HA	ZARDS, CONTROLS	Based on PART B, "H	ZARD ANALYSIS," and worksite/clien	t/project factors.
Summary/outline of work steps/hazards/controls, with references to applicable Sections in Parts B and C, as applicable:						
WORK STEPS			HAZARDS		CONTROLS	
Gauge water levels and sample of monitoring wells using low-flow drawdown methodology			Hazardous chemicals, pump heat stress, insects/spiders/t		See below	

DNALL									
A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.									
EXPLANATORY NOTES, CLARIFICATIONS:									
	ROUTINE PPE ☐ Standard work clothes appropriate for task ☐ Work gloves appropriate for task								
\boxtimes	ROOTINETTE	□ Standard Work clothes appropria □ Hard-toed boots/shoes	ite for task	□ Noise/hearing protection					
		□ Hard-toed boots/siloes □ Hardhat			☐ Noise/nearing protection ☐ High-visibility/reflective vest				
		⊠ Safety glasses			(boot attachments)				
			v-hazard chemica		oves, Tyvek suit, dust mask, boot covers).				
\boxtimes	ROUTINE H&S	□ First Aid Kit		Sun protection (sunsetting)	creen, shade canopy, other)				
	EQUIPMENT/GEAR	□ Fire extinguisher		☑ Project-supplied drink	king water and/or hygiene facilities				
				☐ Poison ivy skin wash (Technu or similar)				
			oray, other)		Vehicle emergency kit (flares, lights, reflective device)				
		□ Caution tape □		☐ Traffic control warning devices (cones, or similar)					
		☐ Other:		1	Y				
	NON-ROUTINE	☐ Goggles and/or face shield	☐ Disposable n-	-95 dust mask	☐ Fire retardant clothing				
	PERSONAL PROTECTIVE	☐ Chemical protective gloves	☐ Half-face resp	oirator (APR), cartridges	☐ Arc Flash Protection				
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)	☐ Full-face resp	pirator (APR), cartridges	☐ Electrical-Hazard-rated boots, gloves				
	(Indicate specific types of PPE in	☐ Outer boots, boot covers	☐ Personal flot		☐ Personal fall apparatus				
	Explanatory Notes, Clarifications)	☐ Other:	-\$						
	SPECIAL HAZARD CONTROLS	☐ Portable GFCI	☐ Lockout/tagout equipment		☐ Ventilation equipment (fan, blower)				
		☐ Eyewash - 15 min. flow	☐ Emergency d	eluge shower	☐ Air horn, alarm				
		☐ Other:							
×	DECON,	☑ Receptacle for disposable PPE	⋈ Hand washin	g provisions	□ Decon solution, related supplies				
	PPE DISPOSAL	☐ Other:			•				
	AIR MONITORING EQUIPMENT, O	:							
	EQUIPMENT FOR WORKER EXPOS	URE TESTING							

B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.							
Explanatory Notes, Clarifications:							
☑ Gen ☑ Wea ☑ Plan ☑ Wor ☑ Illun	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ☐ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ☐ Weather/climate-related hazards – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning ☐ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions. ☐ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). ☐ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.						
	☑ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs Routine Personal Protection – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ Han☑ Eye☑ Foot☐ Hear	d protection - Wear protective work glo protection - Wear safety glasses (with si protection, rough terrain - Wear work ring protection – use earplugs, earmuffs	Vear hardhat or "bump cap" as appropriate for hazard. Ves appropriate for the hazard and work tasks. de shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection. boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions. (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA. otection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.					
☑ Mar☐ Knivtool☑ Wor	nual hand tools - proper tool for the job, res, cutting tools - Utility/folding/collaps s with automatically-retracting blades, o	the site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire." ible knives and fixed open-bladed knives/cutting tools are not permitted, unless specifically authorized. Cutting or with enclosed/guarded blades are permitted. nachinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection). t/machinery – See Section B.5.					
Secur	ity – Delineate site-specific HS aspects,	as appropriate, in "Explanatory Notes, Clarifications," above. res for personal security (such as buddy system, security service, work scheduling, other measures)					
⊠ Rounno t □ Unfa	tine work travel - Use routine safe/defe exting, clear windows, account for weat amiliar location - Plan travel route <u>befor</u> g Distance or During Sleep Hours – Mini	-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. nsive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, her/road conditions, adequate sleep, other measures as appropriate). e driving (assemble maps, enter destination in GPS). mize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ehicle operational controls and handling characteristics before operating vehicle.					
		1					
	SPECIAL DRIVING/TRAFFIC/TRAN IATORY NOTES, CLARIFICATIONS:	SPORTATION HAZARDS Applicable Not Applicable, Not Anticipated					
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	 □ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. □ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. □ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. 					
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment. □ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. □ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. □ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.						
⊠	equipment.						
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	 □ Coordinate with rail company and implement required safety and security measures. □ Site workers to receive safety training for railroad work. 					

DRAF	Т					
	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."				
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	□ Coordinate safety requirements with Airport personnel and implement required safety measures. □ Site workers to receive safety training for railroad/airport work.				
	TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	See Section B.7., "Construction, Heavy Equipment, Lift Equipment"				
B.3. \	NATER/BOATING HAZARDS	☐ Applicable ☐ Not Applicable or Not Anticipated				
EXPLAI	NATORY NOTES, CLARIFICATIONS:					
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	 ☐ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. ☐ Use fuel safety practices, fire extinguisher present in boat. ☐ Have lifesaving skiff/boat available. ☐ Monitor weather, develop float plan, ensure navigation/communication equipment operable. ☐ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. 				
	WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ For tidar, rash hood, daff release flazards, plan hocate work accordingly, other precautions as appropriate. □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards." 				
B.4. I	ALL HAZARDS Applicable	e Not Applicable, Not Anticipated				
EXPLAI	NATORY NOTES, CLARIFICATIONS:					
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Use tether or positioning device □ Ensure safe access to elevated work location (ladder, stair,) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net				
	LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 □ Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more. 				
	SCAFFOLD Supported scaffold Suspended scaffold Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.				
	Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use. 				
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"				

B.5. F	POWERED TOOLS, EQUIPMENT, N	MACHINERY	☐ Applicable	☑ Not Applicable, Not Anticipated
EXPLAN	NATORY NOTES, CLARIFICATIONS:			
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	 Use tool in ac Ensure guard Use PPE or of Provide train Stay clear of For spark/hex Use vise/clan Use respirator See fuel-safet 	to ensure safe operating condition be coordance with manufacturer's speci- ls are in place and no hazardous equi- ther safety practices, as appropriate, ing or verify operator competency for hazard zone, "line of fire," when wor at generating tool, control fire hazard np/work bench or other appropriate	fications. pment modifications. for eye/hearing/hand/head/body protection. or use of power tool. king near where power tools are used. ds, segregate combustible/flammable materials. means to hold/secure the work piece. ppropriate means to control inhalation hazard. rcial Chemical Products."
	OPERATION OF EQUIPMENT/MACHINERY □ Point-of-operation hazards ⊠ Pinch points, moving parts ⊠ 'Struck-by,' 'caught between' □ Hot surfaces, heat ⊠ Extension cords, flexible wire □ Fuel related (gas or liquid) □ Hydraulic pressure □ Pneumatic pressure □ Kinetic, stored energy □ Noise □ Emissions, discharge gases □ Working at heights, falls □ Lifting, repetitive motion □ Illumination □ Electrical	Arrange work Use equipme Ensure point- devices; do r Secure long r Heed warnin Implement lo Use safe lifting Implement sa For climbing/f For electrical l Operate fuel-	-of-operation, mechanical power train not override interlocks, guards, prote nair/loose clothing/hanging jewelry n g signs/labels, keep safe distance; av ockout/tagout for repairs/adjustmen g practices for movement of heavy p fe work practices for compressed air	achinery. anufacturer's use and safety instructions. ansmission, other moving parts are guarded with protective ective devices. alear moving/rotating parts. oid locations of "struck by" and "caught between" hazards. ats/tooling changes. ortable equipment , pressurized systems (pneumatic/hydraulic), stored energy. alipment, see Section B.4., "Fall Hazards." d location.
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY		·	(lockout/tagout), provide lockout/tagout locks and ersonnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	General safe v Hot work per Operator pro Fire hazard co Protect neart For gas weldir Damage; neve	work practices: mit system to be implemented. perly protected (eye protection, clot ontrols (watcher, fire extinguisher, w by personnel from hazardous UV, IR I ng/cutting, use gas cylinder safe prace er secure gas cylinders to metal beno ng, follow electrical safe work practic 13., "Commercial Chemical Products	hing, apron, etc.). vater, isolate combustibles). ight (shielding, curtain). tices (secured, upright, caps on when not in use, prevent th used for arc welding). es. See Section B.8., "Electrical Hazards." ," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed☐ Use eye prote	=	sure to 30 psi or below, equip nozzle with chip guard.
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accord Keep general Never use ind Provide for volume Use hearing poly Use ground-form See Section E Shut down ed 	dance with manufacturer's instruction tor and work area dry. doors, or near building air intake ven entilation and/or air monitoring whe protection in close proximity to operate ords/extension cords specified by instanti	ts due to carbon monoxide hazard. re hazardous accumulation of exhaust emissions is possible. ating generator, as needed.

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: П Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in • For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** □ Applicable **EXPLANATORY NOTES, CLARIFICATIONS:** DRILLING ☐ Follow safe work practices, as applicable: Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max, safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. **IMPORTANT!** This work may/will ☐ Follow safe work practices per Section B.9., "Utility Related Hazards" include close proximity to overhead electric utility lines. ■ Not Applicable, Not Anticipated B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT Applicable EXPLANATORY NOTES, CLARIFICATIONS: Forklift may be used to move drums of investigation-derived waste to the staging area. **HEAVY EQUIPMENT** ⊠ Follow general safe work practices for heavy equipment: Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over. • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. · Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. · Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: Hazards: · Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. - injury from falling load · Crane operator will remain at the controls at all times during operation. - crane tipping over due to Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers Keep area beneath suspended loads clear of personnel. - injury from mechanical hazards

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		Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 □ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches.
	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use. In addition to general safety practices for heavy equipment (above), as applicable: Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits.
		 Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 □ Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer.
		 Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard. Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
\boxtimes	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
B.8. E	ELECTRICAL HAZARDS	plicable ☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v	Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 2, Level 3) General electrical safe work practices, grounding, use of GFCIs Safe work practices during diagnostics/troubleshooting, maintenance, repair Safe design features for electrical equipment

Arc flash protection

 \qed Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and

devices, training workers, designate "authorized" personnel, notify "affected" personnel.

 \square Follow safe work practices per Section B.9., "Utility Related Hazards"

☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/transformer

ENERGY

utility lines.

LOCKOUT/TAGOUT OF ELECTRICAL

IMPORTANT! This work may/will include close proximity to electric

B.9. I	JTILITY RELATED HAZARDS	Applicable	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:		
	OVERHEAD, ABOVE-GROUND UTILITIES	☐ Maintain proper clearance, employ other appropriate pred	cautions for the conditions.
	UNDERGROUND UTILITIES	 □ Confirm appropriate underground utility clearance proced penetrations, and employ other utility clearance/locator p □ Hand digging or vacuum post-holing within 3' of utility locations 	ractices, as appropriate for conditions.
B.10.	CONFINED SPACE ENTRY, HAZA	RDOUS ENCLOSED SPACES	☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:		
	CONFINED SPACE(S) Potential/actual hazards: Atmospheric hazards: Flammable/explosive Oxygen deficiency Hydrogen sulfide Other toxic Combustible dust Electrical Mechanical, engulfment,	 □ Develop effective site-specific entry procedure per applica Personnel to be trained/qualified. Hazards properly characterized Use equipment necessary for safe entry (for access, retr Develop measures for emergency rescue, as applicable. IMPORTANT: Describe site-specific safety measures above in Ex Modify this THA or attach separate confined spaces 	rieval, PPE, air monitoring, ventilation) planatory Notes, Clarifications e safety plan/permit, as appropriate thru control measures to prevent unauthorized
	entrapment, stored energy HAZARDOUS ENCLOSED OR INDOOR SPACE(S) Indoors (occupied or vacant) Machine/equipment pit/vault Basement/crawl space Tunnel, shaft, gallery Trench, excavation Hazardous exhaust or emissions Building-related hazards	entry (such as safety orientation, labeling, delineation, bal Use personal protective clothing to protect from chemical Use respiratory protection, if necessary/appropriate. Duct equipment exhaust to outdoors using passive duct or Use fans, blowers or other effective means of ventilation t Conduct air monitoring, as appropriate for conditions and For a trench/excavation, also see subsection entitled "Trer Heavy Equipment, Lift Equipment." If space classified/regulated as a "confined space," follow of the protection of the	, physical, biological hazards. r active exhaust ventilation. o introduce fresh air/dissipate atmospheric hazards. hazards (see Part C, "Air Monitoring"). nching/Excavation" in Section B.7. "Construction,
B.11.	STORAGE OF BULK MATERIALS	S ☐ Applicable	
	NATORY NOTES, CLARIFICATIONS:	_ r.pp.noasio	
×	STORAGE OF BULK MATERIALS (for Storage of Hazardous Materials, See Section B.13.)	 ✓ Store materials in stable manner (stacked, racked, blocked to prevent tipping, sliding, rolling, falling or collapse. ✓ Do not exceed load limits of racks, platform, scaffold; ensu ✓ Ensure stored materials do not block aisles, passageways. 	
B.12.	INFECTIOUS / ALLERGENIC BIO		☑ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS: e of equipment and purged groundwate		
Storag	□ Wastewater, sewer □ Bird Guano □ Mold, fungi, Valley Fever □ Bloodborne pathogens □ Other (describe above)	☐ Low hazard - use basic hygiene practices, protective gloves☐ More severe hazard - add protective clothing, respirator/d☐ For human pathogens use "Universal Precautions" per Blo	lust mask, decon, as appropriate.
B.13.	COMMERCIAL CHEMICAL PROD	UCTS 🛮 Applicable	☐ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:		
Alcono	ox or similar will be used for decontamin PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD	ation of non-dedicated sampling equipment. ☑ Safety Data Sheets available, either on site or readily avails properly, workers trained/oriented on hazards ☑ For subcontractor use of chemical products, coordinate/di ☐ Conduct air monitoring, as appropriate (see Part C, "Air Monitoring,")	iscuss during safety meetings.
	COMPRESSED GAS (flammable or nonflammable)	☐ Secure cylinders upright, caps on when not in use, handle ☐ Propane cylinders not in use must be stored outdoors in ca ☐ Ensure acetylene cylinders NOT secured to steel arc weldin ☐ Store/use in a manner to prevent asphyxiation hazard. ☐ Segregate oxygen and fuel gases by distance (20') or barrie ☐ Control ignition sources.	age or similar secure enclosure. ng bench.

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			king" signage at cylinder storage area for flammable ga					
			e in a manner to control inhalation exposure hazards, P	-				
	FLAMMABLE/COMBUSTIBLE LIQUIDS		torage (flam. storage cabinets, other storage precaution	ns).				
	LIGOIDS	☐ Use proper fuel safety can (metal fuel can preferred). ☐ Control ignition sources.						
		☐ Grounding and bonding where appropriate.						
П	ACIDS, CAUSTICS, OTHER	☐ Handle with care, use appropriate eye/face/skin protection.						
	CORROSIVES		☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate.					
	TOXIC		substances, use/store in a manner to control exposure	=				
			skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.					
\boxtimes	EMISSIONS FROM FUEL COMBUSTION, INDUSTRIAL	☑ Position outdoor personnel upwind of exhaust source.☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards.						
	PROCESSES		iratory protection for high levels of smoke, exhaust par	-				
	☐ Gasoline		air monitoring as appropriate (see Part C, "Air Monitori					
	□ Diesel		3 11 1	3,				
	☐ Propane/Natural Gas							
	☐ Welding/cutting/hot work ☑ Vehicle/equipment exhaust							
	☐ Other							
П	OTHER HAZARDS	☐ Describe	other hazardous substances and safety measures unde	er "Explanatory Notes, Clarifications," above.				
	CHEMICAL/HAZMAT STORAGE	□ Chemica	I storage cabinet, cage, storage room, or similar.					
	Check this when jobsite		ncompatible chemicals are segregated.					
	requirements include special		secondary containment.					
	provisions for chemical storage.		pecial safety equipment near chemical storage					
B.14.	SITE CONTAMINANTS, CHEMICA	L WASTES	S	□ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS:							
	site COCs include chlorinated VOCs, 1,4-di		exavalent chromium.					
	CALL THAT APPLY. Provide explanatory n			1				
l l	I/groundwater contaminants (historical recent release, known high concentrations	elease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants				
	mer chemical disposal site, landfill		 ⊠ Chlorinated volatile organic compounds (VOCs) ☑ BTEX, petroleum derived VOCs	☐ Sulfides, hydrogen sulfide (H ₂ S) ☐ Cyanides, hydrogen cyanide (HCN)				
l l	pan fill, residual contaminants		☐ Fuel oils, petroleum, waste oil, lubricants	☐ Asbestos				
☐ Cor	ntainerized waste (drums, process equipn	nent)		☐ Lead paint				
	ried drums (known or potential)		☐ Elemental mercury	□ Pesticides, herbicides, fungicides				
	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers				
	ntaminated building surfaces		⊠ Polychlorinated biphenyls (PCBs) □ Potential for flammable vapors	☐ Radioactive contaminants				
	exploded ordnance plosive dust		☐ Potential for flammable vapors ☐ Potential for flammable gas (methane)	☑ Other (see Explanatory Notes, above)				
-		OPERATIONS	, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION	i NS at an "UNCONTROLLED HAZ. WASTE SITE"				
	(per HAZWOPER, 29 CFR 1910.120), im							
	· · · · · · · · · · · · · · · · · · ·		Zone(s), Contaminant Reduction Zone(s) and Support Z	Zone (aka EZ, CRZ, SZ)				
	:		azards per OSHA Hazard Communication Standard. cations and other relevant site-specific information.					
		_	0-hour training, current 8-hour refresher, 3 days superv	vised field experience.				
	 Site supervisor(s) required to 			·				
			Medical Monitoring program, as applicable.					
			rorker protection via engineering controls, work practices, spill containment, emergency preparedness and response					
	monitoring, decontamination procedures, spill containment, emergency preparedness and response. - Conduct air monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").							
	IMPORTANT: Provide supplemental in	formation to	sufficiently detail site-specific procedures for the above	e elements, as appropriate for the work.				
	1		STE BUT NOT REGULATED BY HAZWOPER					
	-		chemical hazards thru safety training/orientation and av					
	i ·		exposure through engineering controls, work practices, itor/evaluate worker exposure, as applicable.	PPE, as арргорпате.				
	OFF-SITE MIGRATION OF	-	ment controls to minimize hazard migration (dust suppl	ression, covers, foam, etc.)				
╽	CONTAMINANTS	1	nunity/perimeter air monitoring to be conducted per pe					
\boxtimes	SPILL CONTAINMENT, CONTAINERS	□ Descri	be above any site-specific procedures for spill containm	nent, container handling, as applicable.				
	RADIATION HAZARDS (Other than	Sunlight)	☐ Applicable	■ Not Applicable, Not Anticipated				
D. 13.	INTERIOR HATAKDS (OTHER HIGH	ı əumym)	□ Applicable	EX INOLAPPIICADIC, INOLALILICIPALEU				

DRAI I									
EXPLANATORY NOTES, CLARIFICATIONS:									
	IONIZING RADIATION								
	NON-IONIZING RADIATION	Describe hazards &	Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").						
B.16.	HAZMAT/DANGE	ROUS GOODS SI	HIPPING/TRAI	NSPORTATION	☐ Applicable	Not Appli	cable, Not Anticipated		
MODE(S) OF TRANSPORT: ☐ Road ☐ Rail ☐ Air ☐ Sea ☐ Inland Waterway ☐ International						☐ International			
IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.									
EXPLA	EXPLANATORY NOTES, CLARIFICATIONS:								

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☐ Not Applicable, Not Anticipated								
EXPLA	EXPLANATORY NOTES, CLARIFICATIONS:								
	AIR-TESTING PARAMETERS	□ VOCs, GASES □ PID, Lamp energy: 9.8 eV □ FID □ Carbon monoxide □ Hydrogen sulfide □ Oxygen (O₂)					☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each paran ☐ Other:	neter	
	ACTION LEVELS FOR O2/LEL		≤19.5% - vent				els, or use Level B.	o hazarde & ignition courses	
	OZ/LEL	□ LEL	☐ LEL Confirm at least 12% oxygen is present to ens At <10% LEL - Continue working, continue to						
	ACTION LEVELS FOR TOXICS	Parameters	. –	Level D,	Modified D*		Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.		
	(sustained breathing zone	□ VOCs		< <u>5</u> pp	om	5 ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)			
	concentrations)	☐ Carbon Mo		< 35 ppm ≥35 ppm - Level B (air-supplied respirator)					
		☐ Hydrogen S	Sulfide			m - Level B (air-supplied respirato			
		☐ Total Dust		< m	ng/m³	> mg/m³ - Level C (air-purifying respirator)			
	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)								
C.2.	OTHER WORKER E	EXPOSURE N	MONITORING	\boxtimes /	Applicable			Not Applicable, Not Anticipated	
	Sampling (sample colle		*				nizing Radiation Testing		
	pe/Bulk Sampling <i>(to e</i>		exposure)		☐ Noise Test	ing		☐ Other	
	NATORY NOTES, CLARI to be conducted in dire		he summer. Sta	ındard hea	at stress precau	tions sho	ould be taken.		

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.						
	Printed Name	Signature	Date			
THA PREPARED BY:						
(minimum one person)						
THA	Printed Name	Signature	Date			
REVIEWED/ APPROVED BY:						
(minimum one person)						

D.2. FIELD CREW ACKNOWLEDGEMENTS							
CONTRACTOR'S FIELD CREW							
Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.							
Printed Name	Signature	Employee No.	Date				
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	IA was made available to you, and you had an opportunit	y to ask questions about the information herein.					
Printed Name	Signature	Company Name	Date				
		<u> </u>					

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION								
TASK:	Aquifer Te	Aquifer Testing						
Project Name:	Omega Sı	uperfund S	Site OU2		Proje	ect Number/Org:	WR2209/1633	
Project Address:	Los Angel	es County	1					
Description of Task & Worksite:	Worksite: - Transducers will be deployed - Perform 48 hour aquifer test - Collect groundwater samples - Remove new pump and restore well to previous conditions							
A.2. EMERGENCY RESPONSE Based on analysis of worksite factors, client/regulatory requirements, availability of emergency services.								
	Consider all Relevant Risk Factors & Response Procedures (fire/explosion, medical, chemicals/spills, security, site factors, weather, communications). EXPLANATORY NOTES, CLARIFICATIONS:							
Available Means of Jobsite E Communication		∨erbal □ Other:		☐ Land Line	е [☐ 2-Way Radio	☐ On-site alarm/signal system	
To Summon Emergency Police, Fire, Al		⊠ DIAL 9	11, for external responders	☐ Other:				
Other Emergency Contacts, a								
(such as security, spill responde Suggested Nearest Emergence		Hospital N	lame: Presbyterian Intercomn	nunity Hospital				
33	Services	Address:	ess: 12401 Washington Boulevard, Whittier, California 90602					
			e #: (562) 698-0811					
Suggested Non-Emergency Ur	gent Care		acility Name: Urgent Care America, Inc. ddress: 13470 Telegraph Road, Whittier, CA 90605					
			e #: (562) 906-7766					
Job-site Evacuation P Rally Point, Place		Rally poin	int will be determined by the contractor carrying out the task.					
Special Ei Equipment/Pr	mergency rocedures	None						
IMPORTANT: After	initial emer	gency resp	onse actions and incident sta	bilization, contact	ct appropr	riate project persor	nel listed in Part A.1.	
A.3. SUMMARY OF WO	ORK STE	EPS, HA	ZARDS, CONTROLS	Based on PART	T B, "HAZ	ARD ANALYSIS," ar	d worksite/client/project factors.	
Summary/outline of work steps								
WORK STEPS			HAZARDS		(CONTROLS		
Oversight of pumping test activities		Struck-by, run-over, caught b roll over, fluid leaks, fuel haza Manual lifting; Working near heavy equipmed Vehicle/equipment exhaust; Slipping/tripping/falling; Eye injury; Heat stress; Electrical shock; Wet surfaces; Site security; urban environm	ards; ent;	 	Non-essential persoduring mobilization Wearing PPE (prote protection, hearing visibility vest) Access, work zone, protected; Staying Hydrated; Control water-relate manner appropriate tasks/equipment/to Position outdoor persource; Make sure proper s	ctive clothing, steel toe boots, eye protection, hard hat, high and storage areas identified and ed/wet-location hazards in a e for the job		

Deployment and retrieval of transducers						protection	PPE (protective clothing,steel toe boots, eye n, high visibility vest); signal devices to re-route vehicles around
Ground	water sample collection	Stru	ck by vehicle travelir	ng in thoroughfar	e.		PPE (protective clothing, steel toe boots, eye n, high visibility vest);
	H&S EQUIPMENT LIST List IATORY NOTES, CLARIFICATIONS:	worksite equipm	ent for worker prote	ction; provide de	tails in Ex	planatory Notes	, Clarifications.
⊠	ROUTINE PPE	因 Hard-toed bo因 Hardhat因 Safety glasse	ed boots/shoes \boxtimes N		☒ Noise/hearin☒ High-visibility☐ Ice creepers	Work gloves appropriate for task Noise/hearing protection High-visibility/reflective vest Ice creepers (boot attachments)	
	ROUTINE H&S EQUIPMENT/GEAR	 ☑ First Aid Kit ☑ Fire extinguisher ☑ Emergency eyewash bottle(s) ☑ Insect control (repellant, wasp spray, other) 			☑ Project☑ Poiso☑ Vehice	ct-supplied drinl n ivy skin wash (le emergency ki	creen, shade canopy, other) king water and/or hygiene facilities (Technu or similar) t (flares, lights, reflective device) ig devices (cones, or similar)
	NON-ROUTINE PERSONAL PROTECTIVE EQUIPMENT (PPE) (Indicate specific types of PPE in Explanatory Notes, Clarifications)	☐ Chemical pro☐ Coveralls (Ty☐ Outer boots,☐ Other:	Goggles and/or face shield Chemical protective gloves Coveralls (Tyvek, or other) Outer boots, boot covers		-95 dust mask pirator (APR), cartridges oirator (APR), cartridges tation device		☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐ Personal fall apparatus
	SPECIAL HAZARD CONTROLS	☐ Portable GFC☐ Eyewash - 15☐ Other:			□ Lockout/tagout equipment □ Emergency deluge shower		☐ Ventilation equipment (fan, blower) ☐ Air horn, alarm
	DECON, PPE DISPOSAL AIR MONITORING EQUIPMENT, OT	☑ Receptacle fo☐ Other:☐ HER		Y		☐ Decon solution, related supplies ordance with procedures in Part C:	
	EQUIPMENT FOR WORKER EXPOSE	JRE TESTING					·

B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.								
Explanatory Notes, Clarifications:								
Gene	General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.							
	 ☑ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location. ☑ Weather/climate-related hazards - heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning 							
	☑ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.							
	■ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).							
	☑ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.							
	☑ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs.							
	· · · · g							
Rout	ine Personal Protection - Delinea	te site-specific HS aspects, as appr	ropriate, in "Explanatory Notes	s, Clarifications," above.				
☑ Head	☑ Head protection from overhead hazards - Wear hardhat or "bump cap" as appropriate for hazard.							
	nd protection - Wear protective work glo							
_		·	•	on), or other appropriate eye protection.				
	ot protection, rough terrain - Wear work							
	aring protection – use earplugs, earmuff							
				othing and/or disposable dust mask, as needed.				
	s, Equipment, Machinery – Deline							
				proper follow through, stay clear of "line of fire." ermitted, unless specifically authorized. Cutting				
	tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-Manual Hand Tools for additional Information. Mathematically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-Manual Hand Tools for additional Information. Mathematically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-Manual Hand Tools for additional Information. Mathematically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-Manual Hand Tools for additional Information.							
□ <u>Op</u>	<u>eration/use of</u> powered tools/equipme	nt/machinery – See Section B.5.						
	r <u>ity</u> – Delineate site-specific HS aspects,							
_	h crime, urban – Use appropriate measu			work scheduling, other measures)				
☑ Working alone - Establish "check in" procedure with supervisor/project manager.								
			-					
Rout	ine Driving Hazards - Delineate site	e-specific HS aspects, as appropria	ate, in "Explanatory Notes, Cla					
Rout ⊠ Rou	ine Driving Hazards – Delineate situtine work travel - Use routine safe/defe	e-specific HS aspects, as appropria ensive driving practices (seat belts,	ate, in "Explanatory Notes, Clar safe speeds, eyes ahead, no ta	ilgating, limit distractions, safe cell phone use,				
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Rout Rou Rou No Uni Lor Uni B.2. EXPLA	ine Driving Hazards – Delineate situatine work travel - Use routine safe/defetexting, clear windows, account for weat familiar location - Plan travel route befour go Distance or During Sleep Hours – Minfamiliar vehicle – Become familiar with vehicle DRIVING/TRAFFIC/TRANNATORY NOTES, CLARIFICATIONS: SPECIAL DRIVING HAZARDS Off-Road Driving or use of nontypical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment. WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle	e-specific HS aspects, as appropria ensive driving practices (seat belts, ther/road conditions, adequate sle re driving (assemble maps, enter d imize fatigue: rest breaks, light sna yehicle operational controls and ha NSPORTATION HAZARDS For off road driving, do not en orientation on slopes. Follow ATV specific procedure Special Skills Required for Vel work vehicle, utility vehicle, s skills through experience. Ensure load is firmly secured Slings, chains, strap, rope and for use, and used in a manne For trailer use, verify signal/b Wear reflective vests where e Where possible, park vehicles Configure work area and sup	ate, in "Explanatory Notes, Clair, safe speeds, eyes ahead, no take, other measures as appropriatestination in GPS). acks (avoid heavy meals), stay handling characteristics before of the measures and propriate and ling characteristics before of the measures are provided by th	iligating, limit distractions, safe cell phone use, riate). pydrated, fresh air, no loud music, clean windshield. perating vehicle. Not Applicable, Not Anticipated vare of wet conditions, speed low, avoid unsafe nt, operation, manufacturer's instructions. In special skills (such as windowless van, heavy ided training and/or has appropriate operator on) to prevent shifting during travel. It owing, hauling, load-securing shall be appropriate ition. It is wiew mirrors effective, hitch/safety chains secure. Deming traffic. It is a secure of the property of the propert				

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	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work.	
	WATER TRANSPORTATION	☐ Follow HS 312 "Water Transportation Safety," and Section B.3., "Water/Boating Hazards."	
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.	
×	TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	☐ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"	
B.3. \	WATER/BOATING HAZARDS	☐ Applicable ☑ Not Applicable or Not Anticipated	d
EXPLA	NATORY NOTES, CLARIFICATIONS:		
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. 	
	WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide	 □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards." 	е
	☐ Diving☐ Ice on/near water body		
B.4.		e ⊠ Not Applicable, Not Anticipated	d
	☐ Ice on/near water body	Not Applicable, Not Anticipated	d
	☐ Ice on/near water body FALL HAZARDS ☐ Applicabl	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Use tether or positioning device □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net	ed
EXPLA	☐ Ice on/near water body FALL HAZARDS ☐ Applicabl NATORY NOTES, CLARIFICATIONS: WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person"	ed

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	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use.
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
B.5. I	POWERED TOOLS, EQUIPMENT,	MACHINERY ☑ Applicable ☐ Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuelrelated hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	 □ For all power tools: Inspect tools to ensure safe operating condition before each use. Use tool in accordance with manufacturer's specifications. Ensure guards are in place and no hazardous equipment modifications. Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection. Provide training or verify operator competency for use of power tool. Stay clear of hazard zone, "line of fire," when working near where power tools are used. For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. Use vise/clamp/work bench or other appropriate means to hold/secure the work piece. □ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. □ See fuel-safety practices in Section B.13., "Commercial Chemical Products." □ For electrical hazards, see Section B.8., "Electrical Hazards".
	OPERATION OF EQUIPMENT/MACHINERY Point-of-operation hazards Pinch points, moving parts Struck-by, 'caught between' Hot surfaces, heat Extension cords, flexible wire Fuel related (gas or liquid) Hydraulic pressure Pneumatic pressure Kinetic, stored energy Noise Emissions, discharge gases Working at heights, falls Lifting, repetitive motion Illumination Electrical	 ☑ General safety requirements for equipment, machinery: Arrange worksite for safe access to equipment/machinery. Use equipment/machinery in accordance with manufacturer's use and safety instructions. Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices. Secure long hair/loose clothing/hanging jewelry near moving/rotating parts. Heed warning signs/labels, keep safe distance; avoid locations of "struck by" and "caught between" hazards. Implement lockout/tagout for repairs/adjustments/tooling changes. ☑ Use safe lifting practices for movement of heavy portable equipment Implement safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy. ☐ For climbing/fall hazards associated with large equipment, see Section B.4., "Fall Hazards." ☑ For electrical hazards, see Section B.8., "Electrical Hazards." ☑ Operate fuel-powered equipment in well ventilated location. ☑ Use safe practices for fuels, see Section B.13., "Commercial Chemical Products."
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	 General safe work practices: Hot work permit system to be implemented. Operator properly protected (eye protection, clothing, apron, etc.). Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles). Protect nearby personnel from hazardous UV, IR light (shielding, curtain). For gas welding/cutting, use gas cylinder safe practices (secured, upright, caps on when not in use, prevent Damage; never secure gas cylinders to metal bench used for arc welding). For arc welding, follow electrical safe work practices. See Section B.8., "Electrical Hazards." See Section B.13., "Commercial Chemical Products," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	 □ Never direct nozzle toward body; do not use compressed air for cleaning clothes. □ If compressed air is used for cleaning, restrict pressure to 30 psi or below, equip nozzle with chip guard. □ Use eye protection. □ Ensure air tank, hoses, fittings are in good repair using factory fittings.

	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 ✓ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: Use in accordance with manufacturer's instructions. Keep generator and work area dry. Never use indoors, or near building air intake vents due to carbon monoxide hazard. Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Use hearing protection in close proximity to operating generator, as needed. Use power cords/extension cords specified by instructions. Use ground-fault circuit interrupters (GFCIs) in accordance with manufacturer's instructions. See Section B.8., "Electrical Hazards." Shut down equipment before refueling. See safe practices for flammable/combustible liquids in Section B.13., "Commercial Chemical Products."
	PORTABLE HEATERS (electric or fuel powered) Hazards: Electric-powered: Electrical shock, fires from hot surfaces. Fuel powered: Carbon monoxide in exhaust, fires from hot surfaces, fuel-related fires	Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: Keep heater dry, and locate heater on level surface away from high traffic areas. Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Keep combustible materials at least 3 feet from hot surfaces. Do not use an extension cord or power strip to power an electric heater. For electric heaters, See Section B.8., "Electrical Hazards." Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids and/or compressed gases in Section B.13., "Commercial Chemical Products."
	DRILLING	
LAFLAI	VATORI NOTES, CLARIFICATIONS.	
	DRILLING Hazards: Struck-by, run-over, caught between (pinch points), manual lifting, roll over, fluid leaks, fuel hazards, suspended equipment IMPORTANT! This work may/will	 □ Follow safe work practices, as applicable: Non-essential personnel to stay clear of drilling work zone when drill rig in operation. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors.
Ш	include close proximity to overhead electric utility lines.	Tollow sale work practices per section 2.7., othing related hazards
R7 (CONSTRUCTION, HEAVY EQUIPM	MENT, LIFT EQUIPMENT Applicable □ Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS:	Entry Entrication, Not Anticipated
	HEAVY EQUIPMENT Hazards: Struck-by, run-over, caught between (pinch points), roll over, fluid leaks, overhead hazards	 ➢ Follow general safe work practices for heavy equipment: Trained/qualified persons operate all heavy equipment. Do not get into a potential crush situation below or between equipment, or in an excavation. No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. Maintain eye contact with operator and use hand signals prior to approaching near equipment. High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. Maximum safe slope for each vehicle will be followed. Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. Spill equipment available for fuel and hydraulic fluid leaks.

DRAFT Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. · Mark temporary roadways clearly, provide berms/stop logs where needed. CRANES ☐ In addition to general safety practices for heavy equipment (above), as applicable: П Hazards: Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. - injury from falling load · Crane operator will remain at the controls at all times during operation. - crane tipping over due to · Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, · Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope, signals or voice communication equipment. bad placement of outriggers Keep area beneath suspended loads clear of personnel. - injury from mechanical hazards Rigging procedures – see Mechanical Lifting, Rigging, below. MECHANICAL LIFTING, RIGGING ☐ In addition to general safety practices for heavy equipment and cranes (above), as applicable: П Applies to lifting by crane, truck-· Coordinate lifting operations with competent person. mounted boom rig (e.g. drill rig), · Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. mechanical/electrical hoist, similar · Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, equipment. and used in a manner as to protect from damage. Hazards: falling loads, personnel · Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. under suspended loads. · Hooks will be equipped with safety latches. · Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use. **FORKLIFT** ☐ In addition to general safety practices for heavy equipment (above), as applicable: \boxtimes Hazards: Struck-by, run-over, • Qualified operator, per established forklift training (certificate is required). overhead hazards, caught between • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. (pinch points), roll over, fluid leaks. · Do not exceed lifting load limits. · Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed. **AERIAL LIFTS** ☐ See Section B.4., "Fall Hazards" П TRENCHING/EXCAVATION ☐ Safe work practices when personnel will enter trenches/excavations: Hazards: Cave-in, hazardous · Activities under supervision/oversight of competent person, daily inspection. atmosphere, structures & • Excavated materials placed at least 2' from trench sidewall. foundations, falls into excavations · Prevent water accumulation in trench. · Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. • Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. • Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . · Workers in trenches to be within 25 feet of ladder or sloped entryway. · Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces" **IMPORTANT!** This work may/will ☐ Follow safe work practices per Section B.9., "Utility Related Hazards" include close proximity to overhead and/or underground utility lines. **DEMOLITION** ☐ Develop/implement demolition safety plan. П **BLASTING** ☐ Develop/implement blasting safety plan.

☑ During site operations protect public (overhead protection, barriers, warning signs).

□ Lock/secure hazardous materials and/or equipment

☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate.

B.8. ELECTRICAL HAZARDS

EXPLANATORY NOTES, CLARIFICATIONS:

PUBLIC AT RISK, SITE SECURITY

☑ Applicable

X

□ Not Applicable, Not Anticipated

\boxtimes	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS	 ✓ Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool.
	Equipment/tool use/operation, use of extension cords, working near	 Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged.
	electrical equipment.	 Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors.
	Hazards: Electrical shock, secondary	Ensure live parts are guarded, enclosures secure.
	hazards (falls, other injuries).	Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN:	☐ Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 3)
	□ Voltage < 50 v	General electrical safe work practices, grounding, use of GFCIs
	□ Voltage 50-600v	Safe work practices during diagnostics/troubleshooting, maintenance, repair
	□ Voltage > 600v	Safe design features for electrical equipment Arc flash protection
	☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power	
	☐ Capacitor/transformer	
	LOCKOUT/TAGOUT OF ELECTRICAL	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and
	ENERGY	devices, training workers, designate "authorized" personnel, notify "affected" personnel.
	IMPORTANT! This work may/will	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
	include close proximity to electric utility lines.	
		Applicable Not Applicable, Not Anticipated
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	OVERHEAD, ABOVE-GROUND	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.
_	UTILITIES UNDERGROUND UTILITIES	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground
	ONDERGROOND OTHERNES	penetrations, and employ other utility clearance/locator practices, as appropriate for conditions.
		☐ Hand digging or vacuum post-holing within 3' of utility locations or other high risk condition.
	CONFINED SPACE ENTRY, HAZA NATORY NOTES, CLARIFICATIONS:	RDOUS ENCLOSED SPACES ☐ Applicable ☐ Not Applicable, Not Anticipated
EXPL	INATORY NOTES, CLARIFICATIONS:	
	CONFINED SPACE(S)	☐ Develop effective site-specific entry procedure per applicable regulatory requirements:
	Potential/actual hazards:	Personnel to be trained/qualified.
	☐ Atmospheric hazards:	Hazards properly characterized
	☐ Flammable/explosive☐ Oxygen deficiency	 Use equipment necessary for safe entry (for access, retrieval, PPE, air monitoring, ventilation) Develop measures for emergency rescue, as applicable.
	☐ Hydrogen sulfide	· IMPORTANT:
	☐ Other toxic	 Describe site-specific safety measures above in Explanatory Notes, Clarifications Modify this THA or attach separate confined space safety plan/permit, as appropriate
	☐ Combustible dust☐ Electrical☐	ividuity this TTA of attach separate commed space safety plant permit, as appropriate
	☐ Mechanical, engulfment,	☐ Protect non-entry personnel working near confined spaces thru control measures to prevent unauthorized
	entrapment, stored energy	entry (such as safety orientation, labeling, delineation, barriers)
	HAZADDOHC FAIGLOSED OD	Use personal protective elething to protect from shortisal which all biological because
	HAZARDOUS ENCLOSED OR INDOOR SPACE(S)	☐ Use personal protective clothing to protect from chemical, physical, biological hazards. ☐ Use respiratory protection, if necessary/appropriate.
	☐ Indoors (occupied or vacant)	☐ Duct equipment exhaust to outdoors using passive duct or active exhaust ventilation.
	☐ Machine/equipment pit/vault	☐ Use fans, blowers or other effective means of ventilation to introduce fresh air/dissipate atmospheric hazards.
	☐ Basement/crawl space☐ Tunnel, shaft, gallery	☐ Conduct air monitoring, as appropriate for conditions and hazards (see Part C, "Air Monitoring"). ☐ For a trench/excavation, also see subsection entitled "Trenching/Excavation" in Section B.7. "Construction,
	☐ Trench, excavation	Heavy Equipment, Lift Equipment."
	☐ Hazardous exhaust or emissions☐ Building-related hazards	☐ If space classified/regulated as a "confined space," follow confined space entry requirements (above).
	STORAGE OF BULK MATERIALS	S Applicable
l .	NATORY NOTES, CLARIFICATIONS: e of equipment, extracted groundwater	and decon water anticipated

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×	STORAGE OF BULK MATERIALS		erials in stable manner (stacked, racked, blocked, inter t tipping, sliding, rolling, falling or collapse.	locked, tied, wrapped, or otherwise secured)				
	(for Storage of Hazardous Materials, See Section B.13.)		ceed load limits of racks, platform, scaffold; ensure rac ored materials do not block aisles, passageways.	ks are stable, robust, secure.				
B.12.	INFECTIOUS / ALLERGENIC BIO		☐ Applicable	☑ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS:	-						
	 □ Wastewater, sewer □ Bird Guano □ Mold, fungi, Valley Fever □ Bloodborne pathogens □ Other (describe above) 	☐ More sev	rd - use basic hygiene practices, protective gloves, prov ere hazard - add protective clothing, respirator/dust ma n pathogens use "Universal Precautions" per Bloodbori	ask, decon, as appropriate.				
B.13.	COMMERCIAL CHEMICAL PRODU	JCTS 🛛 🖊	Applicable	☐ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS:							
	x or similar will be used for decontamina			the control of the co				
\boxtimes	PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD		ta Sheets available, either on site or readily available w workers trained/oriented on hazards	ithin same work shift, containers labelled				
	CONNICIONATION STANDARD		ntractor use of chemical products, coordinate/discuss of	during safety meetings.				
		☐ Conduct air monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").						
	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage.						
	nonflammable)	☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure.						
		☐ Ensure acetylene cylinders NOT secured to steel arc welding bench.						
			in a manner to prevent asphyxiation hazard. oxygen and fuel gases by distance (20') or barrier.					
			nition sources.					
		-	ing" signage at cylinder storage area for flammable gas	es.				
			in a manner to control inhalation exposure hazards, Pf					
П	FLAMMABLE/COMBUSTIBLE	☐ Proper sto	orage (flam. storage cabinets, other storage precaution	s).				
	LIQUIDS		er fuel safety can (metal fuel can preferred).					
		-	nition sources.					
	AOIDE CALICTICE OTHER		g and bonding where appropriate.					
	ACIDS, CAUSTICS, OTHER CORROSIVES		th care, use appropriate eye/face/skin protection. deluge shower, drench hose, hand washing (with wate	r) as appropriate				
	TOXIC		substances, use/store in a manner to control exposure					
	TONIO		rption); use PPE as appropriate, conduct air monitoring	·				
\boxtimes	EMISSIONS FROM FUEL		utdoor personnel upwind of exhaust source.					
	COMBUSTION, INDUSTRIAL PROCESSES		ers, fans to provide fresh air to work area and dissipate					
	☐ Gasoline	-	atory protection for high levels of smoke, exhaust part iir monitoring as appropriate (see Part C, "Air Monitorin					
	☐ Diesel	□ oonddci i	in mornioring as appropriate (see Fair 6, 7 in Worldon)	·9 /·				
	☐ Propane/Natural Gas							
	☐ Welding/cutting/hot work☒ Vehicle/equipment exhaust							
	☐ Other							
	OTHER HAZARDS	☐ Describe	other hazardous substances and safety measures under	"Explanatory Notes, Clarifications," above.				
П	CHEMICAL/HAZMAT STORAGE		storage cabinet, cage, storage room, or similar.					
	Check this when jobsite	☐ Ensure in	compatible chemicals are segregated.					
	requirements include special provisions for chemical storage.		econdary containment.					
	provisions for Grieffilear storage.	☐ Locate sp	ecial safety equipment near chemical storage					
B 14	SITE CONTAMINANTS, CHEMICA	I WASTES		☐ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS:	L WASTES	- Apprount	- Not Applicable, Not Anticipated				
	ite COCs include chlorinated VOCs, 1,4-d	ioxane, and he	exavalent chromium.					
CHECK	ALL THAT APPLY. Provide explanatory r	notes above.						
	/groundwater contaminants (historical r	elease)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants				
	ent release, known high concentrations		☐ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H ₂ S)				
	mer chemical disposal site, landfill		☑ BTEX, petroleum derived VOCs	☐ Cyanides, hydrogen cyanide (HCN)				

 $\hfill\square$ Fuel oils, petroleum, waste oil, lubricants

 $\hfill\Box$ Urban fill, residual contaminants

☐ Asbestos

DRAFT ☐ Containerized waste (drums, process equipment) ☐ Lead paint ☐ Buried drums (known or potential) ☐ Elemental mercury ☑ Pesticides, herbicides, fungicides ☐ Large containers, potential for spills ☐ Polyaromatic hydrocarbons (PAHs) □ Sensitizers ☐ Contaminated building surfaces ⊠ Polychlorinated biphenyls (PCBs) ☐ Radioactive contaminants ☐ Unexploded ordnance ☐ Potential for flammable vapors ☑ Other (see Explanatory Notes, above) ☐ Explosive dust ☐ Potential for flammable gas (methane) FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ, WASTE SITE" X (per HAZWOPER, 29 CFR 1910.120), implement the following as applicable to the work: Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ) Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard. Include site map/figure depicting work locations and other relevant site-specific information. Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience. Site supervisor(s) required to have 8-hr. Supervisor training. Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable. Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response. Conduct air monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring"). IMPORTANT: Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work. FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER П Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate. Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable. OFF-SITE MIGRATION OF ☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) П CONTAMINANTS ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan. SPILL CONTAINMENT, CONTAINERS ☑ Describe above any site-specific procedures for spill containment, container handling, as applicable. X B.15. RADIATION HAZARDS (Other than Sunlight) □ Applicable ☑ Not Applicable, Not Anticipated EXPLANATORY NOTES, CLARIFICATIONS: IONIZING Describe hazards & safety measures above in Explanatory Notes, Clarifications. RADIATION Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring"). NON-IONIZING Describe hazards & safety measures above in Explanatory Notes, Clarifications. П RADIATION Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring"). B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION □ Applicable ☑ Not Applicable, Not Anticipated

MODE(S) OF TRANSPORT:

EXPLANATORY NOTES, CLARIFICATIONS:

☐ Road

☐ Rail

☐ Air

specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.

□ Sea

IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-

□ Inland Waterway

□ International

PART C - AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☐ Not Applicable, Not Anticipated								
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:								
	AIR-TESTING PARAMETERS	□ VOCs, GASES □ PID, Lamp energy: eV □ FID □ Carbon monoxide □ Hydrogen sulfide □ Oxygen (O ₂)					□ Flammable gas (LEL) □ Particulate (dust) □ Calibration kit for each paran □ Other:	neter	
	ACTION LEVELS FOR O2/LEL	☐ Oxygen					els, or use Level B.	a hazards & ignition sources	
	OZ/LEL	□ LEL	≥23.0% - ventilate to lower O₂ to acceptable levels, or use Level B and control fire hazards & ignition sources. □ LEL Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10%.						
	ACTION LEVELS FOR TOXICS	Parameters		Level D,	Modified D*	:	els C or B*, as indicated below, OR take action to reduce breathing vel to concentration acceptable for Level D*.		
	(sustained breathing zone	□ VOCs		< ppm >		> _	ppm to ppm: Level C (air purifying respirator) ppm: Level B (air-supplied respirator)		
	concentrations)	☐ Carbon Mo	onoxide	< 35 ppm)	≥35 ppm - Level B (air-supplied respirator)			
		☐ Hydrogen S	Sulfide	< 10 ppr		≥10 ppm - Level B (air-supplied respirator)			
		☐ Total Dust		< m	ig/m³	> <u></u> m	g/m³ - Level C (air-purifying respi	rator)	
*	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)								
C.2.	OTHER WORKER I	EXPOSURE N	MONITORING	\boxtimes /	Applicable			Not Applicable, Not Anticipated	
☐ Air	Sampling (sample colle	ection, passive	dosimeter)		☐ Ionizing o	r Non-ior	nizing Radiation Testing		
☐ Wip	oe/Bulk Sampling <i>(to e</i>	valuate worker	exposure)		☐ Noise Test	ting		☐ Other	
EXPLA	NATORY NOTES, CLARI	FICATIONS:							

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.						
	Printed Name	Signature	Date			
THA PREPARED BY:						
(minimum one person)						
THA	Printed Name	Signature	Date			
REVIEWED/ APPROVED BY:						
(minimum one person)						

D.2. FIELD CREW ACKNOWLEDGEN	MENTS					
CONTRACTOR'S FIELD CREW Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.						
Printed Name	Signature	Employee No.	Date			
SUBCONTRACTOR'S FIELD CREW Please sign below to acknowledge that this TH	HA was made available to you, and you had an opportunit	y to ask guestions about the information herein.				
Printed Name	Signature	Company Name	Date			

PART A - SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION						
TASK:	Injection	njection Testing Oversight				
Project Name:	Omega S	Omega Superfund Site OU2				
Project Address:	Los Ange	os Angeles County				
Description of Task & Worksite:	Oversee tl	ne implementation o	of a series of injection tests to evaluate feasible injection rates and pressures.			
A.2. EMERGENCY RE	SPONS	E Based on analysi	is of worksite factors, client/regulatory requirements, availability of emergency services.			
Consider all Relevant Risk Fact EXPLANATORY NOTES, CLARIFI		onse Procedures (fire	e/explosion, medical, chemicals/spills, security, site factors, weather, communications).			
Available Means of Jobsite El Communication		∨erbal □ Other:	☐ Cell Phone ☐ Land Line ☐ 2-Way Radio ☐ On-site alarm/signal system			
To Summon Emergenc Police, Fire, Ai	y Services	☑ DIAL 911, for ex	cternal responders			
Other Emergency Contacts, a (such as security, spill responde						
Suggested Nearest Emergency	y Medical		esbyterian Intercommunity Hospital			
	Services	Address: 12401 W Phone #: (562) 698	/ashington Boulevard, Whittier, California 90602 3-0811 ⊠ See Directions in HASP			
Suggested Non-Emergency Ur	gent Care	Facility Name: Urgo Address: 13470 Te	ent Care America, Inc. elegraph Road, Whittier, CA 90605			
		Phone #: (562) 906				
Job-site Evacuation P Rally Point, Place		Rally point will be determined by the contractor carrying out the task.				
Special Ei Equipment/Pr	mergency rocedures	None				
IMPORTANT: After initial eme	ergency res	ponse actions and in	ncident stabilization, contact appropriate project personnel (to be listed in Part A.1 by contractor)			
A.3. SUMMARY OF WO	ORK ST	EPS, HAZARD	S, CONTROLS Based on PART B, "HAZARD ANALYSIS," and worksite/client/project factors.			
Summary/outline of work steps	s/hazards/c	ontrols, with refere	nces to applicable Sections in Parts B and C, as applicable:			
WORK STEPS	HAZARE	OS	CONTROLS			
Perform Injection Testing	Constructi Vehiclular	ion Activities Traffic	A combination of warning tape, fencing, bollards will be placed around the work area to establish an exclusion zone and protect workers from ongoing construction activities			
	primarily	s, and Falls, due to uneven ell vaults, hoses,	Use of steel toe boots, pay close attention to foot placement; slow deliberate movement – do not hurry.			
	berms, ma		Known trip hazards include berms, ramps, hoses, well vaults and manholes.			
Manual lif			Mark or flag hard-to-see objects on the ground that may be a hazard.			
		ting	Use proper lifting techniques (flex at the knees and use legs when lifting).			
		3	Avoid lifting more than 50 pounds. Use the buddy system.			
Heavy Equipment (d		uipment (drill rig)	Avoid area around rig when possible, be aware of moving parts/pinch points			
A.4. H&S EQUIPMENT	LIST List	worksite equipment 1	for worker protection; provide details in Explanatory Notes, Clarifications.			

	EXPLANATORY NOTES, CLARIFICATIONS: Non-routine PPE used during injection testing for protection against contact with injection amendments						
×	ROUTINE PPE	⊠ Standard work clothes appropriate for task ⊠ Ww ⊠ Hard-toed boots/shoes ⊠ No ⊠ Hardhat ⊠ Hiç ⊠ Safety glasses plus face shield □ Ice □ Basic PPE for protection from low-hazard chemical contact & dust ⊠ First Aid Kit ⊠ Sun protect ⊠ Fire extinguisher ⊠ Project-sup ⊠ Emergency eyewash bottle(s) □ Poison ivy stream of the project of th			───────────────────────────────────		
	ROUTINE H&S EQUIPMENT/GEAR				Sun protection (sunscreen, shade canopy, other) Project-supplied drinking water and/or hygiene facilities □ Poison ivy skin wash (Technu or similar) Vehicle emergency kit (flares, lights, reflective device) Traffic control warning devices (cones, or similar)		
	NON-ROUTINE PERSONAL PROTECTIVE EQUIPMENT (PPE) (Indicate specific types of PPE in Explanatory Notes, Clarifications)	Goggles and/or face shield Chemical protective gloves Coveralls (Tyvek, or other) Outer boots, boot covers		☐ Disposable n- ☐ Half-face resp☐ Full-face resp☐ Personal flot	oirator (APR), ca oirator (APR), ca		☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐ Personal fall apparatus
	SPECIAL HAZARD CONTROLS	☐ Portable GFCI ☐ Eyewash - 15 min. flow ☐ Other:			ockout/tagout equipment mergency deluge shower		☐ Ventilation equipment (fan, blower) ☐ Air horn, alarm
\boxtimes	DECON, PPE DISPOSAL	☐ Receptacle for ☐ Other:	or disposable PPE	☐ Hand washin	g provisions		☐ Decon solution, related supplies
	AIR MONITORING EQUIPMENT, O' EQUIPMENT FOR WORKER EXPOS	T, OTHER List equipment/devices to be brought to worksite; Use in accordance with procedures in Part C:					

B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.						
Explanatory Notes, Clarifications:						
General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ General premises hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location.						
☑ Weather/climate-related hazards – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning						
☑ Plant/Insect/Animal Hazards - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.						
☑ Worksite traffic hazards – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).						
☑ Illumination hazards/night work - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.						
☑ Lifting, manual material handling – use proper lifting procedures, seek help for >50 lbs.						
Routine Personal Protection – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☑ Head protection from overhead hazards - Wear hardhat or "bump cap" as appropriate for hazard.						
☑ Hand protection - Wear protective work gloves appropriate for the hazard and work tasks.						
■ Eye protection - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection.						
☑ Foot protection, rough terrain - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.						
☑ Hearing protection – use earplugs, earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA.						
☐ Dust, unsanitary conditions – For general protection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed	d.					
Tools, Equipment, Machinery – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☐ Manual hand tools - proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of f	re."					
☐ Knives, cutting tools - Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are <i>not</i> permitted, unless specifically authorized. Cutt						
tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-Manual Hand Tools for additional Information.	.9					
☑ Working near powered tools/equipment/machinery – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protect	ion).					
☐ <u>Operation/use of</u> powered tools/equipment/machinery – See Section B.5.						
Security – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
☐ High crime, urban – Use appropriate measures for personal security (such as buddy system, security service, work scheduling, other measures)						
■ Working alone - Establish "check in" procedure with supervisor/project manager.						
Routine Driving Hazards – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.						
■ Routine work travel - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone us	,					
no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).	.,					
✓ Unfamiliar location - Plan travel route before driving (assemble maps, enter destination in GPS).						
□ Long Distance or During Sleep Hours – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean wind	shield.					
■ Unfamiliar vehicle – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.						
and the state of t						
B.2. SPECIAL DRIVING/TRAFFIC/TRANSPORTATION HAZARDS ☐ Not Applicable, Not Antici	oated					
EXPLANATORY NOTES, CLARIFICATIONS:						
Transport of materials/amendments needed for injection testing						
☐ SPECIAL DRIVING HAZARDS ☐ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsa	ře –					
Off-Road Driving or use of non-orientation on slopes.						
typical vehicle, heavy vehicle, van,						
golf/utility cart, ATV	-					
work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator. Hazards: Worker injury due to	r					
vehicle collision, rollover skills through experience.						
☐ TRANSPORTING MATERIALS, ☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel.						
IOWING/HAULING LOADS Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be approp						
Hazards: Venicle accident, occupant for use, and used in a manner as to prevent an unsafe condition	iate					
	iate					
injury from shifting load, unsafe equipment. Graduate and the market as to prevent an ansate condition.						

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DRAF ⊠	WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	 ☑ Wear reflective vests where exposed to traffic hazards. ☑ Where possible, park vehicles as protective shield from oncoming traffic. ☑ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☑ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☑ Use DOT-trained flaggers or police detail where appropriate or required.
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work.
	WATER TRANSPORTATION	☐ Follow HS 312 "Water Transportation Safety," and Section B.3., "Water/Boating Hazards."
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.
	TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	⊠ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"
	WATER/BOATING HAZARDS	☐ Applicable ☑ Not Applicable or Not Anticipate
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ic creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards."
B.4.	FALL HAZARDS Applicab	Not Applicable, Not Anticipate
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access to hazard (barriers, tape, sign) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net

LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 □ Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.

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	SCAFFOLD ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	 Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use. 	
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use. 	
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"	
	POWERED TOOLS, EQUIPMENT, I NATORY NOTES, CLARIFICATIONS:	IACHINERY Applicable	ed
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	 □ For all power tools: Inspect tools to ensure safe operating condition before each use. Use tool in accordance with manufacturer's specifications. Ensure guards are in place and no hazardous equipment modifications. Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection. Provide training or verify operator competency for use of power tool. Stay clear of hazard zone, "line of fire," when working near where power tools are used. For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials. Use vise/clamp/work bench or other appropriate means to hold/secure the work piece. □ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard. □ See fuel-safety practices in Section B.13., "Commercial Chemical Products." □ For electrical hazards, see Section B.8., "Electrical Hazards". 	
	OPERATION OF EQUIPMENT/MACHINERY ☑ Point-of-operation hazards ☑ Pinch points, moving parts ☑ 'Struck-by,' 'caught between' ☑ Hot surfaces, heat ☑ Extension cords, flexible wire ☑ Fuel related (gas or liquid) ☐ Hydraulic pressure ☐ Pneumatic pressure ☐ Kinetic, stored energy ☑ Noise ☐ Emissions, discharge gases ☐ Working at heights, falls ☑ Lifting, repetitive motion ☐ Illumination ☑ Electrical	 ✓ General safety requirements for equipment, machinery: Arrange worksite for safe access to equipment/machinery. Use equipment/machinery in accordance with manufacturer's use and safety instructions. Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices. Secure long hair/loose clothing/hanging jewelry near moving/rotating parts. Heed warning signs/labels, keep safe distance; avoid locations of "struck by" and "caught between" hazards. Implement lockout/tagout for repairs/adjustments/tooling changes. ✓ Use safe lifting practices for movement of heavy portable equipment Implement safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy For climbing/fall hazards associated with large equipment, see Section B.4., "Fall Hazards." ✓ Operate fuel-powered equipment in well ventilated location. Use safe practices for fuels, see Section B.13., "Commercial Chemical Products." 	
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.	

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	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	 General safe work practices: Hot work permit system to be implemented. Operator properly protected (eye protection, clothing, apron, etc.). Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles). Protect nearby personnel from hazardous UV, IR light (shielding, curtain). For gas welding/cutting, use gas cylinder safe practices (secured, upright, caps on when not in use, prevent Damage; never secure gas cylinders to metal bench used for arc welding). For arc welding, follow electrical safe work practices. See Section B.8., "Electrical Hazards." See Section B.13., "Commercial Chemical Products," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	 □ Never direct nozzle toward body; do not use compressed air for cleaning clothes. □ If compressed air is used for cleaning, restrict pressure to 30 psi or below, equip nozzle with chip guard. □ Use eye protection. □ Ensure air tank, hoses, fittings are in good repair using factory fittings.
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 ✓ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: Use in accordance with manufacturer's instructions. Keep generator and work area dry. Never use indoors, or near building air intake vents due to carbon monoxide hazard. Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Use hearing protection in close proximity to operating generator, as needed. Use power cords/extension cords specified by instructions. Use ground-fault circuit interrupters (GFCIs) in accordance with manufacturer's instructions. See Section B.8., "Electrical Hazards." Shut down equipment before refueling. See safe practices for flammable/combustible liquids in Section B.13., "Commercial Chemical Products."
	PORTABLE HEATERS (electric or fuel powered) Hazards: Electric-powered: Electrical shock, fires from hot surfaces. Fuel powered: Carbon monoxide in exhaust, fires from hot surfaces, fuel-related fires	 ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: Keep heater dry, and locate heater on level surface away from high traffic areas. Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Keep combustible materials at least 3 feet from hot surfaces. Do not use an extension cord or power strip to power an electric heater. For electric heaters, See Section B.8., "Electrical Hazards." Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids and/or compressed gases in Section B.13., "Commercial Chemical Products."
B.6. I	DRILLING	Not Applicable, Not Anticipated
	NATORY NOTES, CLARIFICATIONS: g to install injection locations to conduct	testing
	DRILLING Hazards: Struck-by, run-over, caught between (pinch points), manual lifting, roll over, fluid leaks, fuel hazards, suspended equipment	 □ Follow safe work practices, as applicable: Non-essential personnel to stay clear of drilling work zone when drill rig in operation. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors.
	IMPORTANT! This work may/will	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
	include close proximity to overhead electric utility lines.	
		MENT, LIFT EQUIPMENT ☐ Not Applicable, Not Anticipated

Heavy	equipment to conduct testing and drill I	ocations. Forklift required for transportation of amendments and materials
	HEAVY EQUIPMENT Hazards: Struck-by, run-over, caught between (pinch points), roll over, fluid leaks, overhead hazards	 Follow general safe work practices for heavy equipment: Trained/qualified persons operate all heavy equipment. Do not get into a potential crush situation below or between equipment, or in an excavation. No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. Maintain eye contact with operator and use hand signals prior to approaching near equipment. High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. Maximum safe slope for each vehicle will be followed. Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. Spill equipment available for fuel and hydraulic fluid leaks. Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Mark temporary roadways clearly, provide berms/stop logs where needed.
	CRANES Hazards: - electrocution by overhead utility - injury in swing radius - injury from falling load - crane tipping over due to overbalancing, high winds, unstable ground, unsafe slope, bad placement of outriggers - injury from mechanical hazards	 □ In addition to general safety practices for heavy equipment (above), as applicable: Only qualified persons operate cranes (certificate required). Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. Equipment to be inspected prior to mobilization and daily by crane operator. Crane operator will remain at the controls at all times during operation. Crane operation must be performed under the direction of an appointed signal person at all times. Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. Keep area beneath suspended loads clear of personnel. Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 ☐ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches. Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
×	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 ☑ In addition to general safety practices for heavy equipment (above), as applicable: Qualified operator, per established forklift training (certificate is required). Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. Do not exceed lifting load limits. Forklift shall not be moved/driven with empty forks in raised position. When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 □ Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

DRAF	Т	
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
×	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
B.8. E	LECTRICAL HAZARDS 🛛 🖾 Ap	plicable
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v AC DC 3-phase Battery and/or solar power Capacitor/transformer	 ☐ Implement electrical safe work practices pertaining to: Worker training/qualification (Level 1, Level 2, Level 3) General electrical safe work practices, grounding, use of GFCIs Safe work practices during diagnostics/troubleshooting, maintenance, repair Safe design features for electrical equipment Arc flash protection
	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	
\boxtimes	IMPORTANT! This work may/will include close proximity to electric utility lines.	☑ Follow safe work practices per Section B.9., "Utility Related Hazards"
		Applicable
EXPLAI	NATORY NOTES, CLARIFICATIONS:	
×	OVERHEAD, ABOVE-GROUND UTILITIES	☐ Maintain proper clearance, employ other appropriate precautions for the conditions.
	UNDERGROUND UTILITIES	 □ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. □ Hand digging or vacuum post-holing within 3' of utility locations or other high risk condition.
B.10.	CONFINED SPACE ENTRY, HAZA	RDOUS ENCLOSED SPACES
EXPLA	NATORY NOTES, CLARIFICATIONS:	
	CONFINED SPACE(S) Potential/actual hazards: Atmospheric hazards: Flammable/explosive Oxygen deficiency Hydrogen sulfide Other toxic Combustible dust Electrical Mechanical, engulfment, entrapment, stored energy	 □ Develop effective site-specific entry procedure per applicable regulatory requirements: Personnel to be trained/qualified. Hazards properly characterized Use equipment necessary for safe entry (for access, retrieval, PPE, air monitoring, ventilation) Develop measures for emergency rescue, as applicable. IMPORTANT: Describe site-specific safety measures above in Explanatory Notes, Clarifications Modify this THA or attach separate confined space safety plan/permit, as appropriate □ Protect non-entry personnel working near confined spaces thru control measures to prevent unauthorized entry (such as safety orientation, labeling, delineation, barriers)
	HAZARDOUS ENCLOSED OR INDOOR SPACE(S) ☐ Indoors (occupied or vacant) ☐ Machine/equipment pit/vault	 ☐ Use personal protective clothing to protect from chemical, physical, biological hazards. ☐ Use respiratory protection, if necessary/appropriate. ☐ Duct equipment exhaust to outdoors using passive duct or active exhaust ventilation. ☐ Use fans, blowers or other effective means of ventilation to introduce fresh air/dissipate atmospheric hazards.

DRAF	Т				
	☐ Basement/crawl space ☐ Tunnel, shaft, gallery ☐ Trench, excavation ☐ Hazardous exhaust or emissions ☐ Building-related hazards	 □ Conduct air monitoring, as appropriate for conditions and hazards (see Part C, "Air Monitoring"). □ For a trench/excavation, also see subsection entitled "Trenching/Excavation" in Section B.7. "Construction, Heavy Equipment, Lift Equipment." □ If space classified/regulated as a "confined space," follow confined space entry requirements (above). 			
B.11.	STORAGE OF BULK MATERIALS	S	☐ Not Applicable, Not Anticipated		
EXPLA	NATORY NOTES, CLARIFICATIONS:				
Materi	als, amendments, and equipment will be				
⊠	STORAGE OF BULK MATERIALS (for Storage of Hazardous Materials, See Section B.13.)	 ⊠ Store materials in stable manner (stacked, racked, block to prevent tipping, sliding, rolling, falling or collapse. ⊠ Do not exceed load limits of racks, platform, scaffold; ≅ Ensure stored materials do not block aisles, passageway. 	ensure racks are stable, robust, secure.		
B.12.	INFECTIOUS / ALLERGENIC BIO		Not Applicable, Not Anticipated		
	NATORY NOTES, CLARIFICATIONS:	плетиро пропосою	2 Not Applicable, Not Aithelpated		
			and the feet band weekly a		
	☐ Wastewater, sewer☐ Bird Guano	 □ Low hazard - use basic hygiene practices, protective gl □ More severe hazard - add protective clothing, respirat 			
	☐ Mold, fungi, Valley Fever	☐ For human pathogens use "Universal Precautions" per			
	☐ Bloodborne pathogens	, e	ů ů		
	☐ Other (describe above)				
B.13.	COMMERCIAL CHEMICAL PRODU	JCTS 🛮 Applicable	☐ Not Applicable, Not Anticipated		
	NATORY NOTES, CLARIFICATIONS:	эете диринали			
Injectio	on Amendments				
\boxtimes	PRODUCTS REGULATED BY HAZARD	☐ Safety Data Sheets available, either on site or readily a	vailable within same work shift, containers labelled		
	COMMUNICATION STANDARD	properly, workers trained/oriented on hazards	o/discuss during safety moetings		
		 ⊠ For subcontractor use of chemical products, coordinat □ Conduct air monitoring, as appropriate (see Part C, "All and the conduct air monitoring). 			
\neg	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on when not in use, han			
Ш	nonflammable)	☐ Propane cylinders not in use must be stored outdoors			
		☐ Ensure acetylene cylinders NOT secured to steel arc w			
		☐ Store/use in a manner to prevent asphyxiation hazard	-		
		☐ Segregate oxygen and fuel gases by distance (20') or b			
		☐ Control ignition sources.			
		$\ \square$ "No smoking" signage at cylinder storage area for flam			
		$\hfill \square$ Use/store in a manner to control inhalation exposure l	nazards, PPE, air monitoring.		
	FLAMMABLE/COMBUSTIBLE	$\hfill\Box$ Proper storage (flam. storage cabinets, other storage μ	precautions).		
	LIQUIDS	☐ Use proper fuel safety can (metal fuel can preferred).			
		☐ Control ignition sources.			
	ACIDE CALIETICE OTHER	☐ Grounding and bonding where appropriate.	atta ii		
Ш	ACIDS, CAUSTICS, OTHER CORROSIVES	☐ Handle with care, use appropriate eye/face/skin prote ☐ Eyewash, deluge shower, drench hose, hand washing i			
\neg	TOXIC	☐ For toxic substances, use/store in a manner to control			
ш		skin absorption); use PPE as appropriate, conduct air r			
П	EMISSIONS FROM FUEL	☐ Position outdoor personnel upwind of exhaust source.			
_	COMBUSTION, INDUSTRIAL	$\hfill \square$ Use blowers, fans to provide fresh air to work area and	d dissipate atmospheric hazards.		
	PROCESSES ☐ Gasoline	\square Use respiratory protection for high levels of smoke, ex	•		
		\square Conduct air monitoring as appropriate (see Part C, "Air	Monitoring").		
	☐ Propane/Natural Gas				
	☐ Welding/cutting/hot work				
	☐ Vehicle/equipment exhaust				
	☐ Other				
	OTHER HAZARDS	\square Describe other hazardous substances and safety meas	ures under "Explanatory Notes, Clarifications," above.		
П	CHEMICAL/HAZMAT STORAGE	☐ Chemical storage cabinet, cage, storage room, or simil	ar.		
ч	Check this when jobsite	☐ Ensure incompatible chemicals are segregated.			
	requirements include special	☐ Provide secondary containment.			
	provisions for chemical storage.				

B.14.	SITE CONTAMINA	NTS, CHEMICAL	WASTES	☑ Applicable			□ Not A	pplicable, Not Anticipated
EXPLAN	NATORY NOTES, CLARI	FICATIONS:						
Main si	Main site COCs include chlorinated VOCs, 1,4-dioxane, and hexavalent chromium.							
CHECK	CHECK ALL THAT APPLY. Provide explanatory notes above.							
⊠ Soil	/groundwater contam	inants (historical rele	ease)	☐ Oxygen deficienc	у		☐ Corrosive, a	acids/caustics, strong irritants
☐ Rece	ent release, known hig	h concentrations			ile organic compounds	(VOCs)		drogen sulfide (H₂S)
	ner chemical disposal	=		⋈ BTEX, petroleum	- '	` '		ydrogen cyanide (HCN)
	an fill, residual contan			☐ Fuel oils, petroleum, waste oil, lubricants			☐ Asbestos	
	tainerized waste (drui		ent)	•	mpounds, metal dusts		☐ Lead paint	
	ed drums (known or p		,	☐ Elemental mercu	•		-	herbicides, fungicides
	je containers, potentia	•		☐ Polyaromatic hyd	=		☐ Sensitizers	3 · · · · · · · · · · · · · · · · · · ·
_	taminated building su			□ Polychlorinated b				contaminants
	exploded ordnance			☐ Potential for flam	•			Explanatory Notes, above)
	osive dust				mable gas (methane)			
		ING OF CLEANIED OF	FRATIONS (STIGATION	S at an "LINCON	ITROLLED HAZ. WASTE SITE"
×				ollowing as applicab		SHOAHON	Satan Giveon	TROLLED TIAL. WASTE SITE
					Reduction Zone(s) and	d Support Zo	one (aka EZ. CRZ	7. SZ)
	·	·			rd Communication Star		(,	.,,
					vant site-specific inforr			
			-		nt 8-hour refresher, 3 d		sed field experie	ence.
		rvisor(s) required to		•		, ,		
	 Site work 	ers in EZ or CRZ to pa	articipate in I	Medical Monitoring p	orogram, as applicable.			
	 Impleme 	nt site-specific proce	dures for wo	rker protection via ei	ngineering controls, wo	ork practice:	s, personal prote	ective equipment (PPE), air
	monitorir	ng, decontamination	procedures,	spill containment, er	mergency preparedness	s and respo	nse.	
					ring, Worker Exposure			
	IMPORTANT: Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work.							
				TE BUT NOT REGULA				
					safety training/orienta			
	•				neering controls, work		PE, as appropri	ate.
	 Conduct a 	air monitoring/samp	ling to monit	or/evaluate worker e	exposure, as applicable) .		
			1					
	OFF-SITE MIGRATIO	N OF			nize hazard migration (
	CONTAMINANTS		☐ Commu	ınity/perimeter air m	onitoring to be conduc	cted per per	imeter air moni	toring plan.
×	SPILL CONTAINMEN	T, CONTAINERS	□ Describ	e above any site-spe	cific procedures for spil	II containme	ent, container h	andling, as applicable.
B 15	RADIATION HAZA	RDS (Other than	Sunlight)	☐ Applicable			⊠ Not A	pplicable, Not Anticipated
	ATORY NOTES, CLARIF	<u> </u>	- annight,					ppcazie, iteli mine.patea
LAFLAIN	ATORT NOTES, CLARII	TICATIONS.						
	IONIZING	Describe hazards &	safety measi	ures above in Explana	atory Notes, Clarification	ons.		
Ш	RADIATION		,		art C, "Air Monitoring, \		osure Monitorir	ng").
		·						
	NON-IONIZING				atory Notes, Clarificatio			
	RADIATION	Conduct exposure r	monitoring, a	s appropriate (see Pa	art C, "Air Monitoring, \	Worker Exp	osure Monitorir	ng").
	HAZMAT/DANGE			1		I		pplicable, Not Anticipated
	MODE(S) OF TRANSPORT: ☐ Road ☐ Rail ☐ Air ☐ Sea ☐ Inland Waterway ☐ International							
								d training (awareness, function-
specific	specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.							
ΕΧΡΙ ΔΝ	EXPLANATORY NOTES, CLARIFICATIONS:							
LAI LAI		. 10/1110110.						

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☐ Not Applicable, Not Anticipated							
EXPLAN	EXPLANATORY NOTES, CLARIFICATIONS:							
	AIR-TESTING PARAMETERS	□ VOCs, GASES □ PID, Lamp energy: eV □ FID □ Carbon monoxide □ Hydrogen sulfide □ Oxygen (O ₂)				☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each par ☐ Other:	rameter	
	ACTION LEVELS FOR O2/LEL				readings reduced to <10%.			
	ACTION LEVELS FOR TOXICS	☐ VOCs ☐ Carbon Monoxide		Level D, N			Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*. ppm_to ppm: Level C (air purifying respirator)	
	(sustained breathing zone concentrations)			< 35 ppm		> ppm: Level B (air-supplied respirator) >35 ppm - Level B (air-supplied respirator)		spirator)
	concentrations)				< 10 ppm ≥10 ppm - Level B (air-supplied respirator)			
		☐ Total Dust			g/m³	> mg/m³ - Level C (air-purifying respirator)		
* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)					ory protection)			
C.2. OTHER WORKER EXPOSURE MONITORING ☐ Applicable ☐ Not Applicable, Not Anticipated								
	Sampling (sample colle		,		\square Ionizing or	Non-ior	nizing Radiation Testing	
	pe/Bulk Sampling <i>(to e</i>		exposure)		☐ Noise Test	ing		☐ Other
	EXPLANATORY NOTES, CLARIFICATIONS: Work to be conducted in direct sunlight in the summer. Standard heat stress precautions should be taken.							

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.				
	Printed Name	Signature	Date	
THA PREPARED BY:				
(minimum one person)				
THA	Printed Name	Signature	Date	
REVIEWED/ APPROVED BY:				
(minimum one person)				

D.2. FIELD CREW ACKNOWLEDGEMENTS				
CONTRACTOR'S FIELD CREW				
Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.				
Printed Name	Signature	Employee No.	Date	
	IA was made available to you, and you had an opportunit	y to ask questions about the information herein.		
Printed Name	Signature	Company Name	Date	

PART A - SITE SAFETY PLAN

SPONSE Bas rs & Response Pro ATIONS: mergency	I Demobilization nd Site OU2 unty from site, entering and leaving ed on analysis of worksite factors ocedures (fire/explosion, medical,	, client/regulatory req	uirements, availability	<u> </u>	
Omega Superful Los Angeles Col Traveling to and SPONSE Bas rs & Response Pro ATIONS: mergency Ver /Alerting Oth / Services DIA	nd Site OU2 unty from site, entering and leaving ed on analysis of worksite factors ocedures (fire/explosion, medical,	, client/regulatory req	uirements, availability	<u> </u>	
Los Angeles Con Traveling to and SPONSE Bas rs & Response Pre ATIONS: mergency Ver /Alerting Oth / Services DIA	from site, entering and leaving ed on analysis of worksite factors ocedures (fire/explosion, medical,	, client/regulatory req	uirements, availability	<u> </u>	
SPONSE Bas rs & Response Pre ATIONS: mergency Ver /Alerting Oth / Services DIA	from site, entering and leaving ed on analysis of worksite factors occdures (fire/explosion, medical,	, client/regulatory req	uirements, availability	<u> </u>	
SPONSE Bas rs & Response Pro ATIONS: mergency	ed on analysis of worksite factors ocedures (fire/explosion, medical,	, client/regulatory req	uirements, availability	<u> </u>	
rs & Response Proceedings of the Proceeding where the proceeding where the proceding where the proceding	ocedures (fire/explosion, medical,	<u> </u>		<u> </u>	
nergency Ver /Alerting 0th / Services DIA		chemicals/spills, secu	ırity, site factors, weatl	her, communications).	
/Alerting □ Oth / Services ⊠ DIA	bal 🗵 Cell Phone				
Services 🗵 DIA	er:	☐ Land Line	☐ 2-Way Radio	☐ On-site alarm/signal system	
	L 911, for external responders	⊠ Other:			
s needed					
er, utility):	al Name: Preshyterian Intercomm	unity Hospital			
Services Addres	ss: 12401 Washington Boulevard,	Whittier, California 90	0602		
Phone	#: (562) 698-0811				
gent Care Facility	Name: Urgent Care America, Inc.				
,					
mergency None					
ocedures					
gency response a	ctions and incident stabilization,	contact appropriate	oroject personnel (to b	pe listed in Part A.1 by contractor)	
RK STEPS,	HAZARDS, CONTROLS	Based on PART B, "	HAZARD ANALYSIS,"	and worksite/client/project factors.	
<u>hazards/controls</u>	, with references to applicable Se	ections in Parts B and	C, as applicable:		
	HAZARDS		CONTROLS		
	Traffic		Defensive driving	while operating work vehicle.	
	Car trouble		emergency. Hand when vehicle is in Have valid US ider traveling in a vehic Have a valid US dr have up to date in	tification on their person when	
2. Entering Site			officers at a pre-de hold a safety brief Drivers shall not e unless a slower sp verbally conveyed	shall meet with site security esignated location to sign in and ing. xceed a maximum speed of 5 MPH eed limit is posted, has been during a safety briefing, or a otice has been distributed before	
	Medical Address Services Phone lent Care Facility Address Phone occedure, Rally por frefuge: nergency occedures gency response as RK STEPS,	Medical Hospital Name: Presbyterian Intercomm Address: 12401 Washington Boulevard, Phone #: (562) 698-0811 Jent Care Facility Name: Urgent Care America, Inc. Address: 13470 Telegraph Road, Whittiphone #: (562) 906-7766 Occedure, Rally point will be determined by the conferency occedures Mone Services Rally Point will be determined by the conferency occedures Jens Services Rally Point Will be determined by the conferency occedures Mone Occedures Research Rally Point Will be determined by the conference Services Rally Point Will be determined by the Conference Rally Point Rall	Medical Services Address: 12401 Washington Boulevard, Whittier, California 90 Phone #: (562) 698-0811	Medical Services	

DRAFI		
3. Pre-mobilization	Location hazards	Project personnel shall assess the pre-selected work locations for safety. Items to note include but are not limited to: - Overhanging wires within 25 ft of full mast height - Active rails - Open roads - Steep or unstable slopes - Soft ground - Thick underbrush - Marked Utilities - Potential Slips, Trips, and Falls - Poisonous plants and animals
	Potential Slips, Trips, and Falls	Areas of soft ground, steep/unstable slopes, or potential slips, trips, and fall hazards shall be marked and/or taped off to bring attention to personnel onsite prevent entrance to that area and reduce the hazard.
4. Mobilization	Security of Staging Area	Trailers, cars, and truck beds shall be locked and equipment not being used shall be securely tied down to prevent tampering by passersby. Staging area may be blocked off with vehicles, cones, tape, or temporary fencing if deemed necessary.
	Driving rig	Only lead driller may operate rig in motion. Lead driller may only drive rig while in a seated position.
	Heavy vehicle rolling down slope or sliding in mud	Lead driver shall maintain eye contact with his/her team while mobilizing. All other personnel shall stand at least 20 ft uphill or 20 ft in front of the vehicle while team is mobilizing.
	Driver hitting personnel with heavy vehicle	All personnel shall be wearing PPE mentioned below except for earplugs so they can hear instructions from lead driver. All personnel shall provide 20 ft of clear space for vehicle when vehicleis in motion. All personnel shall remain in lead driver's sight when vehicle is in motion.
	Rig hitting overhanging cables	Team shall identifying low-hanging cables prior to mobilization and shall not pass under them if the mast is within 25 feet of the wires (active or inactive)-an alternative route will be determined.
5. Demobilizing	Heavy vehicle rolling down slope	Lead Driver shall maintain eye contact with his/her team while demobilizing. All other personnel shall stand at least 20ft uphill or in front of the vehicle while team is demobilizing. All personnel shall be wearing PPE mentioned below
		except for earplugs so they can hear all directions/instructions from lead driver.
	Driver hitting personnel with heavy vehicle	All personnel shall provide 20 ft of clear space for vehicle when vehicleis in motion. All personnel shall remain lead driver's sight when vehicle is in motion.
	Rig hitting overhanging cables	Team shall identifying low-hanging cables prior to mobilization and shall not pass under them if the mast is within 25 feet of the wires (active or inactive) an alternative route will be determined.
6. Leaving Site	Site Security	All gates and buildings will be securely locked if not within vision of on-site personnel.

DRAFT					
7. Traveling from Site		Traffic		Defens	ive driving while operating work vehicle.
		Car trouble			ccess to a mobile phone in case of an
					ency. Hand-held devices shall not be used rehicle is in motion.
					alid US identification on their person when ng in a vehicle.
				Have a	valid US driver's license and the vehicle shall
					to date insurance and registration in the
				glove c	ompartment if operating a vehicle.
A.4. H	1&S EQUIPMENT LIST List	worksite equipment for worker prote	ection; provide d	etails in Explanatory No	otes, Clarifications.
EXPLAN	IATORY NOTES, CLARIFICATIONS:				
	2017117				
\boxtimes	ROUTINE PPE	Standard work clothes appropriate Standard work clothes appropriate Standard work clothes appropriate Standard work clothes appropriate	te for task	, ,	res appropriate for task
· <u></u>				<u> </u>	aring protection
		☑ Hardhat☑ Safety glasses		: •	ility/reflective vest ers (boot attachments)
		ļ	, bazard chamics		<u>`</u>
	ROUTINE H&S	☐ Basic PPE for protection from low	7-Hazaru Chemica		e gloves, Tyvek suit, dust mask, boot covers). unscreen, shade canopy, other)
\boxtimes	EQUIPMENT/GEAR	☐ First Ald Kit ☐ Fire extinguisher		i i	rinking water and/or hygiene facilities
	Eggii MEITI, GEAR	☐ Emergency eyewash bottle(s)		☐ Poison ivy skin was	
		☐ Insect control (repellant, wasp sp	ray other)		y kit (flares, lights, reflective device)
		 ☐ Insect control (repellant, wasp sp ☐ Caution tape 	ray, othor,	,	ning devices (cones, or similar)
		☐ Other:		1	9 4011000 (001100) 01 011111111
_	NON-ROUTINE	☐ Goggles and/or face shield	☐ Disposable n	-95 dust mask	☐ Fire retardant clothing
	PERSONAL PROTECTIVE	☐ Chemical protective gloves		pirator (APR), cartridge	9
	EQUIPMENT (PPE)	☐ Coveralls (Tyvek, or other)		pirator (APR), cartridges	·
	(Indicate specific types of PPE in	☐ Outer boots, boot covers	☐ Personal flo		☐ Personal fall apparatus
	Explanatory Notes, Clarifications)	☐ Other:	,		
П	SPECIAL HAZARD CONTROLS	☐ Portable GFCI	☐ Lockout/tage	out equipment	☐ Ventilation equipment (fan, blower)

☐ Emergency deluge shower

☐ Hand washing provisions

List equipment/devices to be brought to worksite; Use in accordance with procedures in Part C:

☐ Air horn, alarm

☐ Decon solution, related supplies

☐ Eyewash - 15 min. flow

☐ Receptacle for disposable PPE

☐ Other:

☐ Other:

DECON,

PPE DISPOSAL

AIR MONITORING EQUIPMENT, OTHER EQUIPMENT FOR WORKER EXPOSURE TESTING

B.1. ROUTINE HAZARD PREPAREDNESS This section required for all tasks.				
Explanatory Notes, Clarifications:				
⊠ Gen ⊠ Wea ⊠ Plan ⊠ Wor □ Illun ⊠ Lifti	ral Safety, Wellness, Preparedneral premises hazards - housekeeping, rather/climate-related hazards - heat strat/Insect/Animal Hazards - Precautions ksite traffic hazards - Implement measinination hazards/night work - Illuminating, manual material handling - use prone Personal Protection - Delineat	ough terrain, trip hazards, steep slop ess/cold stress measures, sun screer poison ivy wash; insect repellant; ch ures to protect personnel (high visibi e work areas and/or access routes, u per lifting procedures, seek help for a	ne, remote location. n, severe weather shelter/refuge, in the second of	"30/30 rule" for lightning Inimal precautions. lighting, traffic control measures). or on-person lighting, as appropriate.
☑ Hea☑ Han☑ Eye☑ Food☑ Hea☐ Dus	d protection from overhead hazards - V d protection - Wear protective work glo protection - Wear safety glasses (with si protection, rough terrain - Wear work ring protection – use earplugs, earmuffs t, unsanitary conditions – For general protection	Vear hardhat or "bump cap" as approves appropriate for the hazard and we shield or wrap around, either clear boots/shoes with hard toes, ankle sure (or both) as appropriate for condition otection against minimal non-specif	opriate for hazard. work tasks. ar or shaded for sun protection), o upport, puncture resistance, tractions; at a minimum where noise levic hazards, use protective clothing	or other appropriate eye protection. on, as appropriate for conditions. vels exceed 85dBA. g and/or disposable dust mask, as needed.
☐ Mar ☐ Kniv tool ☑ <i>Wor</i>	es, cutting tools - Utility/folding/collaps s with automatically-retracting blades, o	maintain in good condition, use vise ible knives and fixed open-bladed kr or with enclosed/guarded blades are nachinery – safe distance, heed war	c/clamp to hold work piece, prope prives/cutting tools are <u>not permitted.</u>	er follow through, stay clear of "line of fire." ed, unless specifically authorized. Cutting "use PPE (for eye/hearing/dust protection).
☐ High	ity – Delineate site-specific HS aspects, crime, urban – Use appropriate measu king alone - Establish "check in" proced	res for personal security (such as bud	ddy system, security service, work	scheduling, other measures)
Routine Driving Hazards – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above. ⊠ Routine work travel - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate). ⊠ Unfamiliar location - Plan travel route before driving (assemble maps, enter destination in GPS). □ Long Distance or During Sleep Hours – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield. ☑ Unfamiliar vehicle – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.				
B.2. S	PECIAL DRIVING/TRAFFIC/TRAN	SPORTATION HAZARDS	⊠Applicabl e	☐ Not Applicable, Not Anticipated
EXPLAN	IATORY NOTES, CLARIFICATIONS:			
	SPECIAL DRIVING HAZARDS Off-Road Driving or use of non- typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	orientation on slopes. ☐ Follow ATV specific procedures ☐ Special Skills Required for Vehicl	for training, safety equipment, op le type - For vehicles requiring spe	of wet conditions, speed low, avoid unsafe eration, manufacturer's instructions. ecial skills (such as windowless van, heavy training and/or has appropriate operator
	TRANSPORTING MATERIALS, TOWING/HAULING LOADS Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	for use, and used in a manner a	elated equipment used for towing, s to prevent an unsafe condition.	prevent shifting during travel. , hauling, load-securing shall be appropriate mirrors effective, hitch/safety chains secure.
⊠	WORKSITE TRAFFIC HAZARDS Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	 ☑ Wear reflective vests where exp ☑ Where possible, park vehicles as ☑ Configure work area and suppor ☑ Use DOT signal devices to re-rou ☑ Use DOT-trained flaggers or poli 	s protective shield from oncoming It vehicles to minimize worker exp Ite vehicles around work area, site	oosure to traffic hazards. e entrances/exits.
	RAILROAD HAZARD Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company ar☐ Site workers to receive safety tra	· · · · · · · · · · · · · · · · · · ·	security measures.

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	WATER TRANSPORTATION	☐ Follow Section B.3., "Water/Boating Hazards."		
	AIRPORT, AIRCRAFT Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work.		
	TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES	See Section B.7., "Construction, Heavy Equipment, Lift Equipment"		
B.3. \	NATER/BOATING HAZARDS	☐ Applicable		
EXPLAI	NATORY NOTES, CLARIFICATIONS:			
	OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation WORK NEAR WATER HAZARDS OR ENTERING WATER Hazards: drowning, hypothermia from water immersion, related injuries. Wading, wetland, mud/silt Dam release, flash flood, tide Diving Ice on/near water body	 □ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. □ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. □ Use fuel safety practices, fire extinguisher present in boat. □ Have lifesaving skiff/boat available. □ Monitor weather, develop float plan, ensure navigation/communication equipment operable. □ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. □ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. □ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. □ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards." 		
B.4. I	B.4. FALL HAZARDS ☐ Applicable ☐ Not Applicable, Not Antic			
	NATORY NOTES, CLARIFICATIONS:			
	WORKING AT HEIGHTS (GENERAL) Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)	General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds) □ Ensure guardrails present □ Use personal fall apparatus (PFA) □ Use tether or positioning device □ Restrict access beneath work to protect other site personnel from overhead hazards □ Use tether or positioning device □ Ensure safe access to elevated work location (ladder, stair,) □ Ensure covers in place over holes □ Use designated "watch person" □ Use fall protection net		
	LADDERS / STAIRS Extension/straight ladders Step ladders Fixed ladders Stairs Hazards: Falls, overhead hazards	 Follow safe work practices: Use ladders according to safe practices and manufacturer's instructions. Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. Do not use metal (conductive) ladder near electrical hazard. Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more. 		
	SCAFFOLD Supported scaffold Suspended scaffold Free-standing/mobile scaffold Hazards: Falls, overhead hazards, equipment collapse.	□ Follow safe work practices: Identify/coordinate operations with subcontractor's competent person. Supported scaffold level, stable, proper attachments, tiebacks, planking, Suspended scaffolds anchored properly. Guardrails or personal fall apparatus required above 10 feet. Proper means of accessing scaffold (proper ladders, stair tower). Total height of free-standing scaffold not to exceed four times the minimum base dimension. Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.		
	AERIAL LIFT Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.	 Follow safe work practices: Operators to be sufficiently trained, experienced and qualified. Equipment is inspected after mobilization and is in good condition. Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts). Overhead and surface obstructions to be reviewed with operators prior to use. 		
	IMPORTANT! This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"		

B.5. POWERED TOOLS, EQUIPMENT, MACHINERY ☐ Applicable ☐ Not Applicable, Not Anticipated				
EXPLAN	NATORY NOTES, CLARIFICATIONS:			
	POWERED HAND TOOLS Battery-operated Electric-powered, 120v/240v Fuel-powered Pneumatic Powder-actuated Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards	Use tool in an Ensure guard Use PPE or o Provide train Stay clear of For spark/he Use vise/clar Use respirato See fuel-safet	to ensure safe operating condition ccordance with manufacturer's spects are in place and no hazardous exther safety practices, as appropriating or verify operator competency hazard zone, "line of fire," when wat generating tool, control fire hazmp/work bench or other appropria	ecifications. Juipment modifications. e, for eye/hearing/hand/head/body protection. for use of power tool. orking near where power tools are used. ards, segregate combustible/flammable materials. te means to hold/secure the work piece. appropriate means to control inhalation hazard. hercial Chemical Products."
	OPERATION OF EQUIPMENT/MACHINERY Point-of-operation hazards Pinch points, moving parts 'Struck-by,' 'caught between' Hot surfaces, heat Extension cords, flexible wire Fuel related (gas or liquid) Hydraulic pressure Pneumatic pressure Kinetic, stored energy Noise Emissions, discharge gases Working at heights, falls Lifting, repetitive motion Illumination Electrical	Arrange worl Use equipme Ensure point devices; do i Secure long i Heed warnin Implement lo Use safe liftin Implement sa For climbing/i For electrical	-of-operation, mechanical power t not override interlocks, guards, pro hair/loose clothing/hanging jewelry g signs/labels, keep safe distance; pockout/tagout for repairs/adjustme g practices for movement of heavy fe work practices for compressed a	machinery. manufacturer's use and safety instructions. ransmission, other moving parts are guarded with protective detective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission of "struck by" and "caught between" hazards. ransmission of "struck by" and "caught between" hazards. ransmission of "struck by" and "caught between" hazards. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission, other moving parts are guarded with protective devices. ransmission of "struck by" and "caught between" hazards. rents/tooling changes. portable equipment sir, pressurized systems (pneumatic/hydraulic), stored energy. rents/tooling changes. ransmission of "struck by" and "caught between" hazards. rents/tooling changes. rent
	LOCKOUT/TAGOUT OF HAZARDOUS ENERGY			es (lockout/tagout), provide lockout/tagout locks and personnel, notify "affected" personnel.
	WELDING, CUTTING, HOT WORK (GAS OR ARC) UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	General safe v Hot work per Operator pro Fire hazard c Protect nearl For gas weldin Damage; nev For arc weldir	work practices: rmit system to be implemented. pperly protected (eye protection, controls (watcher, fire extinguisher, by personnel from hazardous UV, Ing/cutting, use gas cylinder safe prer secure gas cylinders to metal being, follow electrical safe work practions.	othing, apron, etc.). water, isolate combustibles). R light (shielding, curtain). actices (secured, upright, caps on when not in use, prevent nch used for arc welding). ices. See Section B.8., "Electrical Hazards." cts," for hazards of welding rods (toxic metals), welding gases.
	COMPRESSED AIR, COMPRESSOR (for compressed gases, see Section B.13., "Compressed Gases")	☐ If compressed☐ Use eye prote☐ Ensure air tan	ection. nk, hoses, fittings are in good repain	essure to 30 psi or below, equip nozzle with chip guard. using factory fittings.
	PORTABLE GENERATOR Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	 Use in accord Keep genera Never use ind Provide for v Use hearing Use power of Use ground-f See Section E Shut down e 	dance with manufacturer's instruct tor and work area dry. doors, or near building air intake wentilation and/or air monitoring we protection in close proximity to opords/extension cords specified by if fault circuit interrupters (GFCIs) in 3.8., "Electrical Hazards."	ents due to carbon monoxide hazard. here hazardous accumulation of exhaust emissions is possible. erating generator, as needed.

DRAFT PORTABLE HEATERS ☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: \Box Keep heater dry, and locate heater on level surface away from high traffic areas. (electric or fuel powered) Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. Hazards: Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. Electric-powered: Electrical shock, Keep combustible materials at least 3 feet from hot surfaces. fires from hot surfaces. Do not use an extension cord or power strip to power an electric heater. Fuel powered: Carbon monoxide in For electric heaters, See Section B.8., "Electrical Hazards." exhaust, fires from hot surfaces, Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids fuel-related fires and/or compressed gases in Section B.13., "Commercial Chemical Products." **B.6. DRILLING** ☐ Applicable ☑ Not Applicable, Not Anticipated **EXPLANATORY NOTES, CLARIFICATIONS:** This section applies to single pass mud rotary drilling, sonic drilling, and hollow-stem auger. Always verify that drill rig has sufficient clearance from utility lines before beginning work. DRILLING ☑ Follow safe work practices, as applicable: П Hazards: Struck-by, run-over, caught Non-essential personnel to stay clear of drilling work zone when drill rig in operation. between (pinch points), manual Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. lifting, roll over, fluid leaks, fuel Leaks or defective safety equipment should be repaired before use. hazards, suspended equipment Establish eye contact with operator and use hand signals prior to approaching near equipment. PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. Drill rigs will only be moved with masts lowered. Max, safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. Use safety practices for refueling, fuel handling/storage/transport. Spill equipment is available for fuel and hydraulic fluid leaks. Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. Ventilate and conduct air monitoring, as appropriate, when drilling indoors. **IMPORTANT!** This work may/will ☑ Follow safe work practices per Section B.9., "Utility Related Hazards" include close proximity to overhead electric utility lines. B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT □ Not Applicable, Not Anticipated Applicable EXPLANATORY NOTES, CLARIFICATIONS: **HEAVY EQUIPMENT** ⊠ Follow general safe work practices for heavy equipment: \boxtimes Hazards: Struck-by, run-over, caught · Trained/qualified persons operate all heavy equipment. between (pinch points), roll over, • Do not get into a potential crush situation below or between equipment, or in an excavation. fluid leaks, overhead hazards No passengers on moving/operating equipment except where passenger seat/restraint is present. Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. · Leaks or defective safety equipment should be repaired before use. Operators required to use seatbelts. · Maintain eye contact with operator and use hand signals prior to approaching near equipment. · High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. · Maximum safe slope for each vehicle will be followed. · Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. · Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. · Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. · Mark temporary roadways clearly, provide berms/stop logs where needed. **CRANES** ☐ In addition to general safety practices for heavy equipment (above), as applicable: Hazards: • Only qualified persons operate cranes (certificate required). - electrocution by overhead utility · Critical Lift Plan & Checklist prepared/executed prior to mobilization. - injury in swing radius • Equipment to be inspected prior to mobilization and daily by crane operator. injury from falling load · Crane operator will remain at the controls at all times during operation. - crane tipping over due to Crane operation must be performed under the direction of an appointed signal person at all times. overbalancing, high winds, Communication between crane operator and signal person will be maintained through standard hand unstable ground, unsafe slope,

signals or voice communication equipment.

bad placement of outriggers

	 injury from mechanical hazards 	Keep area beneath suspended loads clear of personnel.
		Rigging procedures – see Mechanical Lifting, Rigging, below.
	MECHANICAL LIFTING, RIGGING Applies to lifting by crane, truck- mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	 □ In addition to general safety practices for heavy equipment and cranes (above), as applicable: Coordinate lifting operations with competent person. Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. Hooks will be equipped with safety latches.
		Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use.
	FORKLIFT Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	 □ In addition to general safety practices for heavy equipment (above), as applicable: • Qualified operator, per established forklift training (certificate is required). • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. • Do not exceed lifting load limits. • Forklift shall not be moved/driven with empty forks in raised position. • When not in use, forks lowered, brake set, controls in neutral, key removed.
	AERIAL LIFTS	☐ See Section B.4., "Fall Hazards"
	TRENCHING/EXCAVATION Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	 □ Safe work practices when personnel will enter trenches/excavations: Activities under supervision/oversight of competent person, daily inspection. Excavated materials placed at least 2' from trench sidewall. Prevent water accumulation in trench. Sloping & shoring for excavations ³ 20' must be approved by a professional engineer. Sloping/shoring/trench box for excavations ³ 5' when persons enter trench/excavation. Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard. Workers in trenches to be within 25 feet of ladder or sloped entryway. Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces"
\boxtimes	IMPORTANT! This work may/will include close proximity to overhead and/or underground utility lines.	☑ Follow safe work practices per Section B.9., "Utility Related Hazards"
	DEMOLITION	☐ Develop/implement demolition safety plan.
	BLASTING	☐ Develop/implement blasting safety plan.
×	PUBLIC AT RISK, SITE SECURITY	 ☑ During site operations protect public (overhead protection, barriers, warning signs). ☑ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☑ Lock/secure hazardous materials and/or equipment.
B.8. E	LECTRICAL HAZARDS 🛛 Ap	plicable
EXPLAI	NATORY NOTES, CLARIFICATIONS:	
	BASIC ELECTRICAL HAZARDS TO SKILLED NON ELECTRICAL WORKERS Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	 Follow safe work practices: Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. Use extension cords/power cords properly, prevent damage, take out of service if damaged. Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. Ensure live parts are guarded, enclosures secure. Enclosures, circuits properly labeled.
	HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN: Voltage < 50 v Voltage 50-600v Voltage > 600v AC DC 3-phase Battery and/or solar power Capacitor/transformer	□ Implement electrical safe work practices pertaining to: • Worker training/qualification (Level 1, Level 2, Level 3) • General electrical safe work practices, grounding, use of GFCIs • Safe work practices during diagnostics/troubleshooting, maintenance, repair • Safe design features for electrical equipment • Arc flash protection
	LOCKOUT/TAGOUT OF ELECTRICAL ENERGY	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel.
\boxtimes	IMPORTANT! This work may/will include close proximity to electric utility lines.	☑ Follow safe work practices per Section B.9., "Utility Related Hazards"

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B.9.	UTILITY RELATED HAZARDS 🛛	Applicable	☐ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS: and-auger first 5' to ensure no undergrou	und utilities are encountered					
×	OVERHEAD, ABOVE-GROUND UTILITIES	☑ Maintain proper clearance, employ other approp	riate precautions for the conditions.				
\boxtimes	UNDERGROUND UTILITIES	☑ Confirm appropriate underground utility clearand					
_		penetrations, and employ other utility clearance/					
D 10	CONFINED SPACE ENTRY, HAZA	☐ Hand digging or vacuum post-holing within 3' of t					
	NATORY NOTES, CLARIFICATIONS:	RDOUS ENCLOSED SPACES Applicat	ble				
LAIL	MATORT NOTES, CEARITOATIONS.						
	CONFINED SPACE(S)	☐ Develop effective site-specific entry procedure <u>po</u>	er applicable regulatory requirements:				
	Potential/actual hazards: ☐ Atmospheric hazards:	Personnel to be trained/qualified.Hazards properly characterized					
	☐ Flammable/explosive		ccess, retrieval, PPE, air monitoring, ventilation)				
	☐ Oxygen deficiency	 Develop measures for emergency rescue, as an 					
	☐ Hydrogen sulfide	· IMPORTANT:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	☐ Other toxic	 Describe site-specific safety measures ab 					
	☐ Combustible dust	 Modify this THA or attach separate confined space safety plan/permit, as appropriate 					
	☐ Electrical						
	☐ Mechanical, engulfment,	entry (such as safety orientation, labeling, deline	ed spaces thru control measures to prevent unauthorized				
	entrapment, stored energy	entry (such as safety offentation, labeling, define	ation, partiers)				
\vdash_{\sqcap}	HAZARDOUS ENCLOSED OR	☐ Use personal protective clothing to protect from	chemical, physical, biological hazards.				
	INDOOR SPACE(S)	☐ Use respiratory protection, if necessary/appropri					
	☐ Indoors (occupied or vacant)	☐ Duct equipment exhaust to outdoors using passiv	ve duct or active exhaust ventilation.				
	☐ Machine/equipment pit/vault		ntilation to introduce fresh air/dissipate atmospheric hazards.				
	☐ Basement/crawl space	\Box Conduct air monitoring, as appropriate for conditions and hazards (see Part C, "Air Monitoring").					
	☐ Tunnel, shaft, gallery		tled "Trenching/Excavation" in Section B.7. "Construction,				
	☐ Trench, excavation	Heavy Equipment, Lift Equipment."	," follow confined space entry requirements (above).				
	☐ Hazardous exhaust or emissions☐ Building-related hazards	in space classified/regulated as a confined space	, Tollow confined space entry requirements (above).				
D 11	STORAGE OF BULK MATERIALS	S ☐ Applicable	☑ Not Applicable, Not Anticipated				
	NATORY NOTES, CLARIFICATIONS:	в 🗆 Аррисавие	Mot Applicable, Not Anticipated				
	e of equipment, soil cuttings, and decon	water anticipated.					
	STORAGE OF BULK MATERIALS		d, blocked, interlocked, tied, wrapped, or otherwise secured)				
_		to prevent tipping, sliding, rolling, falling or colla					
	(for Storage of Hazardous Materials,	☐ Do not exceed load limits of racks, platform, scaf					
D 40	See Section B.13.)	☐ Ensure stored materials do not block aisles, passa					
	INFECTIOUS / ALLERGENIC BIO NATORY NOTES, CLARIFICATIONS:	HAZARDS Applicable	☑ Not Applicable, Not Anticipated				
EXPLA	NATORT NOTES, CLARIFICATIONS.						
П	☐ Wastewater, sewer	\square Low hazard - use basic hygiene practices, protect					
	☐ Bird Guano	☐ More severe hazard - add protective clothing, res					
	☐ Mold, fungi, Valley Fever	☐ For human pathogens use "Universal Precautions	" per Bloodborne Pathogen Program.				
	☐ Bloodborne pathogens						
	☐ Other (describe above)						
B.13.	COMMERCIAL CHEMICAL PROD	UCTS 🛮 Applicable	☐ Not Applicable, Not Anticipated				
EXPLA	NATORY NOTES, CLARIFICATIONS:						
	PRODUCTS REGULATED BY HAZARD	☐ Safety Data Sheets available, either on site or rea	dily available within same work shift, containers labelled				
╵╵	COMMUNICATION STANDARD	properly, workers trained/oriented on hazards					
		\square For subcontractor use of chemical products, coor	dinate/discuss during safety meetings.				
		☐ Conduct air monitoring, as appropriate (see Part	C, "Air Monitoring, Worker Exposure Monitoring").				
	COMPRESSED GAS (flammable or	☐ Secure cylinders upright, caps on when not in use	e, handle with care, prevent damage.				
_	nonflammable)	\square Propane cylinders not in use must be stored outc	loors in cage or similar secure enclosure.				
		☐ Ensure acetylene cylinders NOT secured to steel					
		\square Store/use in a manner to prevent asphyxiation ha					
1		\square Segregate oxygen and fuel gases by distance (20)) or barrier.				

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			gnition sources.				
			king" signage at cylinder storage area for flammable ga				
			e in a manner to control inhalation exposure hazards, P				
	FLAMMABLE/COMBUSTIBLE LIQUIDS	1	torage (flam. storage cabinets, other storage precaution	ns).			
	LIGOIDS	1 1	er fuel safety can (metal fuel can preferred). gnition sources.				
		1	ng and bonding where appropriate.				
	ACIDS, CAUSTICS, OTHER		vith care, use appropriate eye/face/skin protection.				
	CORROSIVES	1	, deluge shower, drench hose, hand washing (with wate	er), as appropriate.			
	TOXIC	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact,					
	ENAUCCIONIC EDONA FLIE	skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.					
\boxtimes	EMISSIONS FROM FUEL COMBUSTION, INDUSTRIAL		outdoor personnel upwind of exhaust source.				
	PROCESSES		vers, fans to provide fresh air to work area and dissipate iratory protection for high levels of smoke, exhaust par				
	☐ Gasoline	1	air monitoring as appropriate (see Part C, "Air Monitori				
	☐ Diesel	Conduct all monitoring as appropriate (see Fart C, All Monitoring).					
	☐ Propane/Natural Gas						
	☐ Welding/cutting/hot work						
	☐ Other OTHER HAZARDS	☐ Describe other hazardous substances and safety measures under "Explanatory Notes, Clarifications," above.					
	CHEMICAL/HAZMAT STORAGE Check this when jobsite	E ☐ Chemical storage cabinet, cage, storage room, or similar. ☐ Ensure incompatible chemicals are segregated.					
	requirements include special	1	secondary containment.				
	provisions for chemical storage.	1	pecial safety equipment near chemical storage				
14. S	: SITE CONTAMINANTS, CHEMICAL	· ·		☐ Not Applicable, Not Anticipate			
	NATORY NOTES, CLARIFICATIONS:						
	site COCs include chlorinated VOCs, 1,4-		exavalent chromium.				
	ALL THAT APPLY. Provide explanatory			1			
	l/groundwater contaminants (historical		☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants			
	ent release, known high concentrations mer chemical disposal site, landfill		 ⊠ Chlorinated volatile organic compounds (VOCs) ⊠ BTEX, petroleum derived VOCs 	☐ Sulfides, hydrogen sulfide (H ₂ S) ☐ Cyanides, hydrogen cyanide (HCN)			
	oan fill, residual contaminants		☐ Fuel oils, petroleum, waste oil, lubricants	☐ Cyanides, riyarogen cyanide (HCN)			
	ntainerized waste (drums, process equip	ment)	✓ Metals, metal compounds, metal dusts	☐ Lead paint			
	ried drums (known or potential)	monty	☐ Elemental mercury				
	ge containers, potential for spills		☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers			
☐ Cor	ntaminated building surfaces		☑ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants			
□ Une	exploded ordnance		☐ Potential for flammable vapors	oxtimes Other (see Explanatory Notes, above)			
□ Ехр	plosive dust		☐ Potential for flammable gas (methane)				
\boxtimes	FOR WORK CONSISTING OF CLEANUF (per HAZWOPER, 29 CFR 1910.120), i		, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATION following as applicable to the work:	IS at an "UNCONTROLLED HAZ. WASTE SITE"			
	1 -	-	Zone(s), Contaminant Reduction Zone(s) and Support 2	one (aka EZ, CRZ, SZ)			
	1		azards per OSHA Hazard Communication Standard.	, ,			
			cations and other relevant site-specific information.				
	:		0-hour training, current 8-hour refresher, 3 days superv	vised field experience.			
	- Site supervisor(s) required						
	i .		n Medical Monitoring program, as applicable. Forker protection via engineering controls, work practice	es personal protective equipment (DDF) air			
			s, spill containment, emergency preparedness and response				
			see Part C, "Air Monitoring, Worker Exposure Monitorin				
			sufficiently detail site-specific procedures for the above				
	•		STE BUT NOT REGULATED BY HAZWOPER				
	 Workers to be knowledgea 	ble/aware of o	chemical hazards thru safety training/orientation and av	ailability of hazard information			

Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate.

 $\hfill\square$ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.)

☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.

☑ Describe above any site-specific procedures for spill containment, container handling, as applicable

Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable.

SPILL CONTAINMENT, CONTAINERS

OFF-SITE MIGRATION OF

CONTAMINANTS

 \boxtimes

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B.15.	.15. RADIATION HAZARDS (Other than Sunlight)							
EXPLAN	XPLANATORY NOTES, CLARIFICATIONS:							
	Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").							
	NON-IONIZING RADIATION Describe hazards & safety measures above in Explanatory Notes, Clarifications. Conduct exposure monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring").							
B.16.	HAZMAT/DANGER	ROUS GOODS S	HIPPING/TRA	NSPORTATION	☐ Applicable	, i	Not Applic Applic Not Applic N	cable, Not Anticipated
MODE	(S) OF TRANSPORT:	☐ Road	□ Rail	☐ Air	□ Sea	☐ Inland Wate	rway	☐ International
	IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.							
EXPLAI	NATORY NOTES, CLARI	FICATIONS:						

PART C - AIR MONITORING, WORKER EXPOSURE MONITORING

C.1.	C.1. AIR MONITORING (Direct-Reading Instruments) ☐ Applicable ☐ Not Applicable, Not Anticipated							
EXPLA	NATORY NOTES, CLARIF	ICATIONS:						
	AIR-TESTING PARAMETERS	□ VOCs, GASES □ PID, Lamp energy: eV □ FID □ Carbon monoxide □ Hydrogen sulfide □ Oxygen (O₂)				□ Flammable gas (LEL) □ Particulate (dust) □ Calibration kit for each paran □ Other:	neter	
	ACTION LEVELS FOR O2/LEL		<19.5% - venti				els, or use Level B.	e hazards & ignition sources
	OZ/LLL	□ LEL	 ≥23.0% - ventilate to lower O₂ to acceptable levels, or use Level B and control fire hazards & ignition sources. □ LEL □ Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. □ At <10% LEL - Continue working, continue to monitor LEL levels □ At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10%. 					
	ACTION LEVELS FOR TOXICS	Parameters	<u> </u>	Level D,	Modified D*	Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.		
	(sustained breathing zone	□ VOCs		< ppm ppm to ppm: Level C (air purifying respirator) > ppm: Level B (air-supplied respirator)				
	concentrations)	☐ Carbon Mo		< 35 ppm ≥35 ppm - Level B (air-supplied re				
		☐ Hydrogen S	Sulfide				m - Level B (air-supplied respirato	
		☐ Total Dust		< m	ng/m²	> m	g/m³ - Level C (air-purifying respi	rator)
		П		 				
	* Levels of Protection: Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection) Level C (air purifying respirator or dust mask, in addition to chemical protective clothing) Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)							
C.2.	OTHER WORKER E	XPOSURE N	MONITORING	\boxtimes /	Applicable			Not Applicable, Not Anticipated
	☐ Air Sampling (sample collection, passive dosimeter) ☐ Ionizing or Non-ionizing Radiation Testing ☐ Heat Stress Testing ☐ Wipe/Bulk Sampling (to evaluate worker exposure) ☐ Noise Testing ☐ Other							
	NATORY NOTES, CLARI to be conducted in dire		he summer. Sta	ındard hea	at stress precau	itions sho	ould be taken.	

PART D - APPROVALS, ACKNOWLEDGEMENTS

To be prepared by contractor supervising the work.

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.						
	Printed Name	Signature	Date			
THA PREPARED BY:						
(minimum one person)						
THA	Printed Name	Signature	Date			
REVIEWED/ APPROVED BY:						
(minimum one person)						

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D.2. FIELD CREW ACKNOWLEDGEN	MENTS		
CONTRACTOR'S FIELD CREW			
Please sign below to acknowledge you reviewed	and understand this THA, participated in project safety l	briefing and had an opportunity to ask questions about	the information herein.
Printed Name	Signature	Employee No.	Date
SUBCONTRACTOR'S FIELD CREW			
Please sign below to acknowledge that this TH	HA was made available to you, and you had an opportun	ity to ask questions about the information herein.	
Printed Name	Signature	Company Name	Date

Appendix C: Summary of Chemical Hazards

1,4-Dioxane

1,4-Dioxane is used as a solvent. Acute (short-term) inhalation exposure to high levels of 1,4-dioxane has caused vertigo, drowsiness, headache, anorexia and irritation of the eyes, nose, throat, and lungs in humans. It may also irritate the skin. Damage to the liver and kidneys has been observed in rats chronically (long-term) exposed in their drinking water. In three epidemiologic studies on workers exposed to 1,4-dioxane, the observed number of cancer cases did not differ from the expected cancer deaths. Tumors have been observed in orally exposed animals. EPA has classified 1,4-dioxane as a Group B2, probable human carcinogen.

Chemical Name	PEL ¹	TLV^2
1,4-dioxane	100	20

¹ Cal/OSHA Permissible Exposure Limit in parts per million TWA

Chlorinated Solvents/Volatile Organic Compounds (VOCs)

Chlorinated VOCs are widely used as solvents in industrial operations such as degreasing, manufacturing, cleaning and dry cleaning, and are also present in household products and automotive fluids. They readily form vapors which can accumulate in indoor air spaces (i.e., via migration through the subsurface) and react with ozone to form sub-micron sized particles with the potential to cause adverse respiratory health effects. Free product releases (via surface or subsurface discharges or inadequate disposal) can migrate downward to significant depths and through fine-grained deposits to groundwater, and can persist as wide-scale sources of vapor plumes for long periods of time.

Several chlorinated hydrocarbons have been identified in soil, indoor air vapor, and groundwater at the site including perchloroethylene (PCE), trichloroethylene (TCE), and 1,2-dichloroethane (DCA). The likely routes of exposure to chlorinated solvents include inhalation, ingestion and direct contact with the skin or eye. The toxicity of chlorinated solvents varies; many affect the CNS and some are identified as carcinogens. PCE can affect the CNS and cause irritation of the skin, eyes, and upper respiratory tract. TCE can depress the CNS, affect kidneys, liver, and lungs and can cause rapid and irregular heartbeat. Toxic effects are increased when combined with alcohol, caffeine, and other drugs. DCA can cause CNS depression and damage to the liver, kidneys, heart, and digestive system. Eye contact with DCA can cause irritation and serious injury if not removed promptly. DCA and TCE are flammable liquids; the LEL of both solvents are approximately 6% and their flash points are less than 100°F. PCE is not considered flammable. These chlorinated solvents are only slightly soluble in water.

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² ACGIH Threshold Limit Value in parts per million TWA

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Exposure levels will be maintained below OSHA PEL or NIOSH REL as shown in the table below.

Chemical Name	PEL ¹	REL^2
trichlorofluoromethane (Freon 11)	50	1
1,1,2-trichloro-1,2,2-trifluroethane (Freon 113)	100	1000
1,1-Dichloroethane (1,1-DCA)	100	Ca
1,1-Dichloroethene (1,1-DCE)	200	200
1,2-Dichloroethane (1,2-DCA)	50	200
1,1,2-trichloroethane (1,1,2-TCA)	10	10
cis-1,2-dichloroethene	200	200
carbon tetrachloride	10	5
chloroform	100	10
tetrachloroethene (PCE)	100	25
trichloroethene (TCE)	100	Ca

OSHA Permissible Exposure Limit (PEL) in parts per million

Hexavalent Chromium

Hexavalent chromium [Cr(VI)] is one of the valence states (+6) of the element chromium. It is usually produced by an industrial process. Cr(VI) is known to cause cancer. In addition, it targets the respiratory system, kidneys, liver, skin and eyes. A major source of worker exposure to Cr(VI) occurs during "hot work" such as welding on stainless steel and other alloy steels containing chromium metal. Cr(VI) compounds may be used as pigments in dyes, paints, inks, and plastics. It also may be used as an anticorrosive agent added to paints, primers, and other surface coatings. The Cr(VI) compound chromic acid is used to electroplate chromium onto metal parts to provide a decorative or protective coating.

Workplace exposure to hexavalent chromium may cause lung cancer in workers who breathe airborne hexavalent chromium; irritation or damage to the nose, throat, and lung (respiratory tract) if hexavalent chromium is breathed at high levels; and/or irritation or damage to the eyes and skin if hexavalent chromium contacts these organs in high concentrations.

Chemical Name	PEL ¹	TLV^2
Hexavalent Chromium	0.005	0.05

¹ Cal/OSHA Permissible Exposure Limit in parts per million TWA

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² ACGIH Threshold Limit Value (TLV) in parts per million

Ca - Carcinogenic

² ACGIH Threshold Limit Value in parts per million TWA

Appendix D: Air Monitoring

Applies to Task:		6 7 8 9		
Photoionization Detector (PID)	Oxygen (O ₂) Meter	Explosimeter		
Brand/Model No.: MiniRAE 3000 TM	Brand/Model No.:	Brand/Model No.:		
<u>eV:10.6</u>	Manitaring Frances	Manifestina Francisco		
Monitoring Frequency: continuously in breathing zone	Monitoring Frequency:	Monitoring Frequency:		
Breathing Zone	Reading (%)	Source (% LEL)		
Reading (ppm) Action	Action	Reading Action		
0 to 5 Level D PPE	Less than 19.5 Stop work. Evacuate the area.	1 to 10 Continue with caution.		
5 _ to25 Level C PPE	19.5 to 23.5 Continue to work with caution.	Greater than 10 Stop work. Evacuate the area. If upon		
Greater than <u>25</u> Stop work. Evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls.	Greater than 23.5 Stop work. Evacuate the area.	return, if concentration still exceeds 10% LEL, ventilate until concentration is back to <10% LEL.		
Note: readings taken in the breathing zone and sustained for > 1	Note:	Note:		
minute.				
Flame Ionization Detector (FID)	Chemical Detector Tube	Other: Gas-Chromatograph with PID		
Flame Ionization Detector (FID) Brand/Model No.:	Chemical Detector Tube Brand/Model No.:	Other: Gas-Chromatograph with PID Brand/Model No		
Brand/Model No.: Monitoring Frequency: Breathing Zone	Brand/Model No.: Monitoring Frequency: Breathing Zone	Brand/Model No Monitoring Frequency: Breathing Zone		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action	Brand/Model No Monitoring Frequency: Breathing Zone Reading (ppm) Action (1,4 Dioxane)		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE	Brand/Model No Monitoring Frequency: Breathing Zone Reading (ppm) Action (1,4 Dioxane) to Level D PPE, monitor periodically		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE	Brand/Model No Monitoring Frequency: Breathing Zone Reading (ppm)		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE	Brand/Model No Monitoring Frequency: Breathing Zone Reading (ppm) Action (1,4 Dioxane) to Level D PPE, monitor periodically		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm)	Brand/Model No		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon return, levels still exceed, stop work and implement engineering controls.	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon return, levels still exceed, stop work and implement engineering controls.	Brand/Model No		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon return, levels still exceed, stop work	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm)	Brand/Model No		
Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon return, levels still exceed, stop work and implement engineering controls.	Brand/Model No.: Monitoring Frequency: Breathing Zone Reading (ppm) Action to Level D PPE to Level C PPE Greater than Stop work. Evacuate the area. If upon return, levels still exceed, stop work and implement engineering controls.	Brand/Model No		

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Appendix E: Personal Protective Equipment

	Task ①	Task ②	Task 3	Task @	Task ⑤	Task ©	Task ⑦	Task ®	Task 9		
Potential PPE	\boxtimes D	\boxtimes D	\boxtimes D	\boxtimes D	⊠ D	⊠ D	⊠ D	⊠ D	\boxtimes D		
Level per Task	⊠C	⊠C	□С	C	⊠C	□С	□С	□С	□С		
Modified Level D					Level C						
Equipm	nent	Ma	terial/Typ	e	Eq	Mater	rial/Type				
Safety glasses				Ful	Full-face air-purifying respirator				Cartridge Type:		
Hard-toed boots				⊠Hal	Half-mask air-purifying respirator				ge Type:		
Protective clothin	ng			Saf	⊠ Safety glasses						
⊠ Hard hat*				⊠Haı	Hard-toed boots						
Hearing protection	on*			Pro	Protective clothing						
High-visibility vo	est*	Тур	e II	⊠Haı	☐ Hard hat						
Outer boots*				⊠ Hea	☐ Hearing protection*						
Outer gloves*		Nitr	ile	⊠Hig	⊠ High-visibility vest*			Type II	[
Other:			Out	Outer boots*							
				Out	Outer gloves*			Nitrile			
				Inn	☐ Inner gloves*						
				Oth	ier:						

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^{*} PPE items may be downgraded (only with concurrence of Project's Health and Safety Coordinator and PM)

Appendix F: Safety Data Sheets

Included in this HASP	Chemical			
	Acetone			
\boxtimes	Alconox			
	Ammonia			
\boxtimes	Bentonite			
	Diesel Fuel Oil No. 2-D			
	Gasoline			
	Helium			
	Hexane			
	Hydrochloric Acid			
	Hydrogen			
\boxtimes	Isobutylene Calibration Gas			
	Isopropyl Alcohol			
	KB-1			
	Methane Calibration Gas			
	Nitric Acid			
	Permanganate			
\boxtimes	Portland Cement			
	Sulfuric Acid			
	Other:			

Note: SDSs are for chemicals that used to perform project work, not site contaminants. Contractors will add applicable SDSs based on any chemicals they bring to the project.

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ALCONOX MSDS

Section 1: MANUFACTURER INFORMATION

Product name: Alconox

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.

30 Glenn St. Suite 309

White Plains, NY 10603.

Manufacturer emergency 800-255-3924.

phone number: 813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.

30 Glenn St. Suite 309

White Plains, NY 10603.

Supplier MSDS date: 2009/04/20 D.O.T. Classification: Not regulated.

Section 2: HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155- 30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE
497-19- 8	7-13	SODIUM CARBONATE	NOT AVAILABLE	4090 MG/KG RAT ORAL 6600 MG/KG MOUSE ORAL	2300 MG/M3/2H RAT INHALATION 1200 MG/M3/2H MOUSE INHALATION
7722- 88-5	10-30	TETRASODIUM PYROPHOSPHATE	5 MG/M3	4000 MG/KG RAT ORAL 2980 MG/KG MOUSE ORAL	NOT AVAILABLE
7758-2 9-4	10-30	SODIUM PHOSPHATE	NOT AVAILABLE	3120 MG/KG RAT ORAL 3100 MG/KG MOUSE ORAL >4640 MG/KG RABBIT DERMAL	NOT AVAILABLE

Section 2A: ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).

CAS# 497-19-8: LD50 4020 mg/kg - rat oral. CAS# 7758-29-4: LD50 3100 mg/kg - rat oral.

Section 3: PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Solid

Appearance & odor: Almost odourless.

White granular powder.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): Not applicable.

Vapour density (air=1): Not applicable.

By weight: Not available.

Evaporation rate (butyl acetate = 1): Not applicable.

Boiling point (°C): Not applicable.

Freezing point (°C): Not applicable.

pH: (1% aqueous solution).

9.5

Specific gravity @ 20 °C: (water = 1).

0.85 - 1.10

Solubility in water (%): 100 - > 10% w/w

Coefficient of water\oil Not available.

dist.:

VOC: None

Section 4: FIRE AND EXPLOSION HAZARD DATA

Flammability: Not flammable.

Conditions of Surrounding fire. flammability:

Extinguishing media: Carbon dioxide, dry chemical, foam.

Water Water fog.

Special procedures: Self-contained breathing apparatus required.

Firefighters should wear the usual protective gear.

Auto-ignition Not available. temperature:

Flash point (°C), None

method:

Lower flammability Not applicable. limit (% vol):

Upper flammability Iimit (% vol): Not applicable.

Not available.

Sensitivity to mechanical impact: Not applicable.

Hazardous combustion Oxides of carbon (COx).

products: Hydrocarbons.

Rate of burning: Not available.

Explosive power: None

Section 5: REACTIVITY DATA

Chemical stability: Stable under normal conditions.

Conditions of instability: None known.

Hazardous Will not occur.

polymerization:

Incompatible Strong acids. substances: Strong oxidizers.

Hazardous See hazardous combustion products.

decomposition products:

Section 6: HEALTH HAZARD DATA

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of Acute Exposure

Eye contact: May cause irritation.

Skin contact: Prolonged contact may cause irritation. **Inhalation:** Airborne particles may cause irritation.

Ingestion: May cause vomiting and diarrhea.

May cause abdominal pain. May cause gastric distress.

Effects of chronic contains an ingredient which may be corrosive.

LD50 of product, species & route: > 5000 mg/kg rat oral.

LC50 of product, species Not available for mixture, see the ingredients section.

Exposure limit of Mot available for mixture, see the ingredients section.

Sensitization to product: Not available.

Carcinogenic effects: Not listed as a carcinogen.

Reproductive effects: Not available. Teratogenicity: Not available. Mutagenicity: Not available. Synergistic materials: Not available.

Medical conditions Not available. aggravated by exposure:

First Aid

Skin contact: Remove contaminated clothing.

Wash thoroughly with soap and water. Seek medical attention if irritation persists.

Eye contact: Check for and remove contact lenses.

Flush eyes with clear, running water for 15 minutes while holding

eyelids open: if irritation persists, consult a physician.

Inhalation: Remove victim to fresh air.

Seek medical attention if symptoms persist.

Ingestion: Dilute with two glasses of water.

Never give anything by mouth to an unconscious person. Do not induce vomiting, seek immediate medical attention.

Section 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Leak/Spill: Contain the spill.

Recover uncontaminated material for re-use. Wear appropriate protective equipment.

Contaminated material should be swept or shoveled into

appropriate waste container for disposal.

Waste disposal: In accordance with municipal, provincial and federal regulations.

Handling procedures and Protect against physical damage.

equipment: Avoid breathing dust.

Wash thoroughly after handling. Keep out of reach of children.

Avoid contact with skin, eyes and clothing. Launder contaminated clothing prior to reuse.

Storage requirements: Keep containers closed when not in use.

Store away from strong acids or oxidizers. Store in a cool, dry and well ventilated area.

Section 8: CONTROL MEASURES

Precautionary Measures

Gloves/Type:



Neoprene or rubber gloves.

Respiratory/Type:



If exposure limit is exceeded, wear a NIOSH approved respirator.

Eye/Type:



Safety glasses with side-shields.

Footwear/Type: Safety shoes per local regulations. **Clothing/Type:** As required to prevent skin contact.

Other/Type: Eye wash capability should be in close proximity.

Ventilation requirements:

Local exhaust at points of emission.

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0 Revision Date 12/29/2008 Print Date 06/16/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Bentonite

Product Number : 285234
Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd

2149 Winston Park Drive OAKVILLE ON L6H 6J8

CANADA

Telephone : +1 9058299500 Fax : +1 9058299292 Emergency Phone # : 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Montmorillonite

Formula : H2Al2O6Si Molecular Weight : 180.1 g/mol

CAS-No.	EC-No.	Index-No.	Concentration	
Bentonite a colloidal clay. consist primarily of montmorillonite				
1302-78-9	215-108-5	-	-	

3. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Lungs

WHMIS Classification

Not WHMIS controlled. Not WHMIS controlled.

HMIS Classification

Health Hazard: 0
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects

InhalationSkinMay be harmful if inhaled. May cause respiratory tract irritation.May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation. **Ingestion** May be harmful if swallowed.

4. FIRST AID MEASURES

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point not applicable

Ignition temperature no data available

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid dust formation.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

For prolonged or repeated contact use protective gloves.

Eye protection

Safety glasses

Hygiene measures

General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form granules
Colour grey, beige

Safety data

pH 6.0 - 9.0

Melting point no data available Boiling point no data available

Flash point not applicable
Ignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Density 2.400 g/cm3
Water solubility no data available

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Aluminum oxide, silicon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Intravenous - rat - 35 mg/kg

Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema.

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

Carcinogenicity - mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

Signs and Symptoms of Exposure

Lung irritation, Asthma

Potential Health Effects

InhalationMay be harmful if inhaled. May cause respiratory tract irritation.SkinMay be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation. **Ingestion** May be harmful if swallowed.

Target Organs Lungs,

Additional Information RTECS: CT9450000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 19,000 mg/l - 96 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

DSL Status

All components of this product are on the Canadian DSL list.

WHMIS Classification

Not WHMIS controlled.

Not WHMIS controlled.

16. OTHER INFORMATION

Further information

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guide. The inform product with reg product. Sigma-	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.				

MATERIAL SAFETY DATA SHEET 29 CFR 1910.1200 OSHA Hazard Communication Rule Format Chem-Tel 24 Hour Emergency # 1-800-255-3924 MINE SAFETY APPLIANCES COMPANY P.O. Box 426 Pittsburgh, PA 15230 PHONE (412) 967-3000

This product contains isobutylene, oxygen and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 10028038 Calibration Check Gas, 100 ppm Isobutylene in Air

CHEMICAL NAME - Isobutylene, Oxygen, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 10028038 Calibration Gas

FORMULA - C_4H_8 in Air

APPLICABLE CHEMICAL CONTENTS

NOTE: Gas under pressure, 1000 PSIG at 70°F, Approx. 100 Liters gas at atmospheric pressure

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR - Colorless odorless gas.

BOILING POINT - N/A SPECIFIC GRAVITY $(H_2O = 1) - N/A$

VAPOR PRESSURE - N/A PERCENT VOLATILE BY VOLUME - N/A

VAPOR DENSITY (AIR = 1) - > 1

SOLUBILITY IN WATER - Isobutylene - Insoluble

Oxygen - 3.2 cm³/100 ml (25°C) Nitrogen - 2.3 cm³/100 ml (0°C)

N/A - Not Applicable

PHYSICAL HAZARD INFORMATION

PHYSICAL HAZARD - Compressed gas, 1000 PSIG at 70°F

CONDITIONS OR MATERIALS TO AVOID - None

FLASH POINT - N/A LEL - N/A UEL - N/A

EXTINGUISHING MEDIA - This calibration gas mixture is not flammable. Use extinguishing media appropriate to surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES - See Next Item

UNUSUAL FIRE AND EXPLOSION HAZARDS - Gas under pressure, 1000 PSIG at 70°F. Do not exceed 120°F.

HEALTH HAZARDS

HEALTH HAZARDS - None Known for 100 ppm Isobutylene in Air. Isobutylene Inhalation Rat LC50: 620 Gm/M³/4H. Isobutylene Inhalation Mouse LC50: 415 gm/M³/2H.

SIGNS AND SYMPTOMS OF EXPOSURE - N/A to this gas mixture.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - Isobutylene is an asphyxiant, which displaces oxygen in the environment...

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - No information

EXPOSURE LIMITS - None (ACGIH 2009)

CARCINOGENICITY DATA - Component gases are not listed by NIOSH RTECS, OSHA, NTP or IARC.

EMERGENCY AND FIRST AID PROCEDURES - None

SAFE HANDLING AND USE

HYGIENIC PRACTICES - Avoid breathing gas.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT - N/A

PROCEDURES FOR SPILL OR LEAK CLEANUP - Ventilate area

WASTE DISPOSAL - Do not puncture or incinerate cylinder. Before discarding cylinder, slowly release contents to a safe exhaust. Dispose of cylinder in accordance with local, state and federal regulations

STORAGE - Store in a cool, dry, well-ventilated area. Do not exceed 120°F.

CONTROL MEASURES

PERSONAL PROTECTIVE EQUIPMENT - Due to the limited amount of gas in the cylinder, and the low release rate employed in instrument calibration, respiratory protection is not indicated under conditions of intended use.

ENGINEERING CONTROLS - Mechanical ventilation is suitable.

WORK PRACTICES - Avoid breathing gas. Use in well-ventilated areas. Follow the calibration procedure detailed in the MSA instruction manual provided with the instrument under calibration.

DATE OF PREPARATION - Rev. 2, April 2009

WARNING: This is a hazardous chemical product. By following the directions and warnings provided with this product, the hazards associated with the use of this product can be greatly reduced but never entirely eliminated. Mine Safety Appliances Company makes no warranties, expressed or implied, with respect to this product and EXPRESSLY DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Users assume all risks in handling, using or storing this product.



SECTION 1 - INFORMATION PRODUCT AND MANUFACTURER Product name: **CAS#:** Portland cement 65997-15-1 Other commercial name: Types GU-PER (10PER), GU(10), MS(20), HE(30), LH(20M), Trillium Cement MSDS prepared by: Laboratory Ciment Quebec Inc. Manufacturer: Ciment Quebec Inc. 145, Centenaire boulevard 145, Centenaire boulevard St-Basile, Quebec, Canada G0A 3G0 St-Basile, Quebec, Canada G0A 3G0 Preparation date: August 2009 Phone: (418) 329-2100 Fax: (418) 329-3436 **Revision date:** September 2009 Calcium compounds. Calcium silicate compounds and other calcium compounds containing iron and **Components:** aluminum make up the majority of this product. Material uses: Main component in the majority of the mixtures of concrete. **Personal protection**

WHMIS Classification et pictograms :

Class D2A **Material causing** other toxic effects



Class E Corrosive material











SECTION 2 - INGREDIENT COMPOSITION					
Name	CAS#	%	Lethal dose (LD ₅₀)		
Tricalcium Silicate	12168-85-3	30-70			
Dicalcium Silicate	10034-77-2	10-30			
Tetracalcium-Alumino-Ferrite	12068-35-8	1-20			
Calcium Sulfate	7778-18-9	2-10	194 g/m ³ (human inhalation)		
Tricalcium Aluminate	12042-78-3	1-15			
Calcium Carbonate	1317-65-3	0-5			
Magnesium Oxide	1309-48-4	0-5			
Calcium Oxide	1305-78-8	0-0,2			
Crystalline Silica	14808-60-7	0-0,2	400 mg/kg (ipr rat)		
Chromates	Various	<0,1			

SECTION 3- PHYSICAL AND CHEMICAL PROPERTIES				
Appearance :	Fine gray powder (solid and odorless)	Boiling point :	> 1000 °C	
pH (in water):	12-13	Specific gravity ($H_2O=1.0$):	3,2	
Solubility in water:	0,1 to 1%	Evaporation rate:	Not applicable	
Vapor pressure :	Not applicable	Freezing point :	Not applicable	
Vapor density:	Not applicable	Viscosity:	Not applicable	

SECTION 4 - FIRE AND EXPLOSION RISKS			
Flammable limits :	Non combustible	Fire hazards :	Not applicable
Hazardous combustion products:	None	Explosion hazards:	Not applicable
General hazards:	Avoid breathing dust.	Flash point :	Not applicable
Fire fighting instructions:	This product is non combustible. Treat adjacent material. Self contained breathing apparatus		
	is recommended to limit exposure to smoke from any combustion source.		

SECTION 5 - ACCIDENTAL RELEASE MEASURES, HANDLING AND STORAGE			
Spills or release :	Spills or release: Collect dry material using a scoop or shovel. Avoid actions that cause dust to become airborne. Avoid inhalation and skin contact with dust. Do not spill into drains.		
Handling and storage:	Minimize dust exposure. Keep product dry until used. Promptly remove dusty clothing or launder		
	before reuse. Wash thoroughly after exposure.		

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	SECTION 6 - TOXICOLOGICAL INFORMATION				
Access zones :	ccess zones: Skin contact, eye contact, inhalation and ingestion (unlikely).				
Effects of acute exposure :	<u>Skin</u> :	in: Cement and cement paste can dry the skin, cause irritations, burns, skin cracking as well			
		as an allergic reaction in the presence of hexavalent chrome.			
	$\underline{\mathbf{Eyes}}:$	Irritation, chemical burns and blindness in case of exposure to large amounts of cement.			
	Inhalation :	Irritation of the higher respiratory tracts. It can cause irritation of the internal walls of			
		the nose.			
Effects of chronic	Skin:	Epidermis burns. People hypersensitive to chrome may exhibit allergic responses, from			
exposure:		mild rash to severe skin ulcers.			
	Inhalation :	May contain trace concentrations of crystalline silica. Prolonged exposure to breathable			
		free crystalline silica can aggravate upper respiratory and lung diseases and cause			
		silicosis.			
Ingestion:	Ingestion of a	n of a small quantity of Portland cement is not harmful, nevertheless large quantities can be			
	unhealthful a	nd cause intestinal problems.			
Exposure limits:	Threshold Li	mit Value-Timed Weighted Average (TLV-TWA) = 10 mg total dust/m ³ for Portland			
	cement.				
	TLV-TWA =	0,1 mg breathable dust/m ³ for crystalline silica.			
Carcinogenicity:	Crystalline si	lica, a contaminating product of traces in Portland cement, is classified at present as being			
	a carcinogeni	c product (group 1) by the International Agency for Research (IARC).			
Other remarks :		ry may occur without pain or discomfort. The hazardous ingredients when in contact with			
		e calcium hydroxide, with an alkalinity level of pH 12 to 13. This level of alkalinity can			
	cause skin an	d eye irritation.			

SECT	SECTION 7 – EXPOSURE CONTROLS / PERSONAL PROTECTION			
Skin protection :	Gloves, boots and clothing to prevent skin contact. Wash periodically exposed skin with soap and water. Rinse wet kiln dust mixtures from clothing to prevent skin contact.			
Respiratory protection:	Avoid actions that cause dust dispersion. Wear an approved respirator for dust if the levels exceed the exposure limits.			
Eye protection:	Carry tight safety glasses in dusty medium. Contact lenses should not be worn.			
Ventilation :	Ventilation should be sufficient in volume and distribution to maintain dust exposure limits.			
To minimize exposure of breathable airborne crystalline silica, occupational health and safety regulations generally require measures such as: work practices, hygiene practices, protective clothing and respiratory equipment. Consult the relevant regulations.				

SECTION 8 - STABILITY AND REACTIVITY			
Stability:	Product is stable.		
Hazardous	No decomposition. If in contact with water, may produce calcium silica hydrates and calcium		
decomposition:	hydroxide.		
Incompatible materials and conditions to avoid :	Dissolves in hydrofluoric acid producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, chlorine trifluoride and oxygen difluoride.		

	SECTION 9 – FIRTS AID
Eye:	Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes including under lids, to remove all particles. Call physician immediately.
Skin:	Wash with pH-neutral soap and cool water. Seek medical attention in case of prolonged exposure and burns.
Inhalation :	Move person to fresh air and seek medical attention if coughing and other symptoms persist. Inhalation of large amounts require immediate medical attention.
Ingestion :	Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

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